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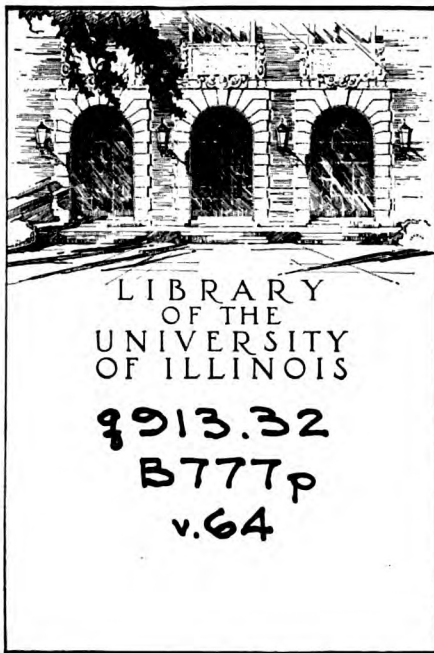
CITY OF SHEPHERD KINGS

BY
FLINDER ' PETRIE, KT.

ANCIENT GAZA V

BY
E. J. H. MACKAY & MARGARET A. MURRAY

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VOL. LXIV

CITY OF SHEPHERD KINGS

W. M. FLINDERS PETRIE, Kt.,

D.C.L., LL.D., Litt.D., D.Lit., D.Sc., F.R.S., F.B.A., A.R.I.B.A.

AND

ANCIENT GAZA V

BY

ERNEST J. H. MACKAY, D.Litt., AND MARGARET A. MURRAY, D.Lit.

WITH INTRODUCTORY CHAPTER BY

HILDA FLINDERS PETRIE, F.R.G.S.

AND CHAPTERS BY

ELINOR W. GARDNER, M.A., AND CARL PAPE, B.A., A.R.I.B.A.

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CITY OF SHEPHERD KINGS AND ANCIENT GAZA V

INTRODUCTION

HILDA F. PETRIE

. . . the citie of Philisten that now is called Gaza, that is to say the rich citie, and it is right fayre and full of folke and it is a little uppon the sea. . . .

The Voiage and Travayle of Syr John Maundeville, Knight.

SUMMARY OF CONTENTS OF VOLUME. This volume serves a double purpose. It is not only *Ancient Gaza V*, to give details of the fifth and last excavation of Tell el Ajjûl, but it is intended, under the title of *City of Shepherd Kings*, to inform a larger public of Flinders Petrie's five-year examination of a site ranging through the periods of Canaanite, Middle Kingdom, and Hyksos domination.

Part I, by Flinders Petrie. Chapter I summarises most of our exploration in Palestine—the Old Stone Age at Gaza and Beth-pelet (Tell el Fara), the Copper Age, the Canaanites, the Egyptian invaders, the Shepherd Kings, and lastly the XVIIIth–XIXth dynasties.

Subsequent chapters (III and VIII–XII) report the objects recently found, with careful datings from style, and comparison with previous finds. The study of the imported goldwork (Chapters IV, V, VI) leads to a consideration of the various deities (Chapter VII).

Part II, by Dr. Ernest Mackay, Dr. Margaret Murray, Miss Elinor Gardner, Mr. Carl Pape, A.R.I.B.A. Chapters XIII–XVIII describe the season's excavation of the two Hyksos towns, subjects arising, and geological detail of the wady; they end with rock-cut tombs near Jerusalem, and some remains from the plateau above 'Amman.

FORTHCOMING PUBLICATIONS. Following on this, I would mention that there are several volumes still in MS. on various subjects, but these can only be published if donations from the public are forthcoming.

There are two quarto volumes on Egypt—the long-awaited *Proto-dynastic Corpus*, with *Ceremonial Slate Palettes* in their chronological order; and the *Seven Memphite Tomb Chapels*.

Also three small books, entitled *Lone Syrian Shore* (caravan tour); *Truth in Fantasy* (some new aspects in Roman history); and *Some Motives of Life*.

GAZA, EARLY OCCUPATION. Tell el Ajjûl, the Mound of the Calves, stands sentinel above a creek where the desert stream of Ghazzeah flows out into the S.E. corner of the "Great Green," the Mediterranean. Here lay the best port between Haifa and Egypt, sought by the little trading vessels. Eight different standards of weight were in use, for the merchandise of many lands.

The Neolithic, so well marked at Beth-pelet, is not represented here, neither any period later than XVIIIth–XIXth dynasties. But intermediately five peoples dominated this border, and Gaza was sometimes used as a jumping-off ground for the conquest of Egypt.

The Copper Age, the Canaanites, XIIth dynasty invaders, the Early and the Late Hyksos followed each other in succession, with intermittent desolate periods, and each city, in the stratified series 4 ft. apart, has its burnt layers of ash—our own camp near by being the latest victim of devastation.

When from Gerar we first visited Ajjûl it seemed that the ruins occupied about 33 acres (Troy covered 2 acres). We found the tell partly cultivated but in a poor and ignorant way; then each season we filled up the combs and hollows with our basket loads and this held the rainfall in; but lastly, while we were away at Anthedon in Sinai two seasons, the cultivators reverted to their old ways and our salvage was lost.

Copper Age. No trace remains of the dwellings of Pyramid times, but cemeteries below the tell show the mode of burial, contracted, head to east, in roofed pits lined with slabs or in a shaft with chamber. Each grave had globular pots and a copper dagger.

There followed a succession of five periods each with its town and palace. We cleared a large area down to basal marl, but no trace of any temple was discovered.

FIRST PALACE, CANAANITE. The tell or mound stands high, scarped towards the estuary, and three sides protected by a fosse 20 × 30 ft. for a length of 3000 ft. It was of North Syrian type like Homs, with long inner *glacis* slope and vertical face. A thousand tons of sandstone hewn from this fosse formed a massive foundation of slabs, dressed and placed on edge, underlying the mud brick walls of the palace.

To establish a frontier city, a square fortress was intended, but a lesser residency was substituted because the North Syrian tribe who built it effected entry of Egypt meanwhile and seized the Delta, where they ruled as the VIIth–VIIIth dynasties.

The palace was built of large yellow clay bricks; it was a rectangle 165 × 75 ft., the walls 6 ft. thick, and it contained 8 × 5 chambers. One of these had stone columns seemingly, another was a bathroom with sloped and plastered floor.

SECOND PALACE, XIIth DYNASTY. Six centuries later, after desolation and erosion, Gaza was overrun by Egypt and rose once more to strength. The Middle Kingdom invaders built a palace whose thinner walls marked their security. The fine yellow bricks were 1 ft. square, the unit of measure being the Great Northern foot of 13.28 ins. Bathrooms were in use, but not known in the later palaces.

THIRD AND FOURTH PALACES, HYKSOS. The Shepherd Kings were little horsemen who pushed down from Asia shortly after 2000 B.C. They were nomads, living on borrowed arts. Gaza became a stronghold of the Early Hyksos, and once more a key city; they presently invaded Egypt and established themselves as dynasty XV.

The third palace was a massive fortress with walls 8½ ft. thick, for which the old bricks of palace ii were largely re-used. In the middle of the courtyard we found a brick tower which proved to be the cenotaph of some queen and contained treasure. Her ten gold armlets, each numbered and curiously made, and her Syrian ear-rings and toggle-pins were laid here for security.

The Late Hyksos largely utilised palace iii, strengthening and adding to it. On its refounding as palace iv, at a higher level, they seem to have sacrificed a horse; we also discovered further traces of the remains of horse feasts. There was yet another invasion of Egypt, and once again Shepherd Kings succeeded and these were known as dynasty XVI.

FIFTH PALACE, XVIIIth DYNASTY. "The last palace is associated with pottery of XVIIIth dynasty," dated by double cartouches of 1481 B.C. It was almost all washed away by denudation, nowhere more than a foot left, and thinning out. Nothing of XIXth dynasty was found. "Probably the latest building was due to Thothmes III and its fall to the revolt under Akhenaten." It seems that Egypt never lost hold of the south border when Upper Palestine and Syria revolted.

Since that time the only occupants of the tell have been Arab squatters.

From this one site we obtain a view of many civilisations down through the ages, informed by the detail of the palaces, the streets and houses, the port, the towers, the intermittent burials and hoards.

The several instances of central fire-hearths, of whitewashed shrines with shell-lined benches and wash-basins, of bathrooms and privies, of horse sacrifices, kilns, and cattle troughs afford us a very detailed picture of these peoples, and below the walled city lay their defences, with tunnels for ambush and escape, their sunken ways, their wells, and cemeteries.

The chief classes of smaller finds were the copper and bronze tools and weapons, and weights; the pottery and painted vases, and the alabasters; scarabs more than a thousand, mostly Canaanite; the ivories and bone inlay, toilet objects, beads and jewellery; small Hyksos figures; and two expiatory deposits, as in Achan's purgation (*Joshua vii*) but a thousand years earlier. The gold ornaments, of granular technique and other, surpass these in their value and historical interest, and testify to the richness of the site.

We have published 298 plates of objects in facsimile and views from these discoveries.

The antiquities brought each season from Palestine have mostly been placed in the Institute of Archaeology (Regent's Park).

The antiquities from Egypt are still housed at University College, Gower Street. It is expected that some part at least of the Flinders Petrie Collection will shortly be re-arranged in a gallery which has just been rebuilt in University College, Gower Street, and it is to be hoped that it will be reopened to celebrate the Flinders Petrie Centenary in 1953.

It remains for me to thank those who have helped the present volume:—

Sir Bruce Ingram for allowing me the use of two coloured plates of the *Illustrated London News*,

Ann Petrie for duplicating the outline plates of

this and other volumes, before we ran the risks of transport from Jerusalem,

Carl Pape for his plans, sections, and registers.

I am also indebted for help with details of text to Mrs. B. Tufnell and Mrs. I. Bedford.

"These researches which have thrown so much indirect light on the Scriptures . . ."

HISTORICAL RESULTS AND PROSPECTS. "The eight years of search in S. Palestine" (Tells Hesya, Jemmeh, Fara, Ajjūl) "have been more fruitful for the history of Egypt than any other seasons, excepting the Naqada and Badari discoveries.

"The two dark ages of Egypt have also been explained by the invasions of people from the Caspian basin, bringing their characteristic weapons and ornaments—the highly civilised rock-workers of the VIIth and VIIIth dynasties, and the rude horsemen of the XVth and XVIth Hyksos dynasties. We at last know something of the sources and the nature of each people.

"For the history of Palestine our work has been fundamental as, in place of vague ages of bronze and iron, we have it stabilised by the scale of the Egyptian dynasties and earlier Sequence Dates." *Ancient Gaza* IV, p. 19.

"The value of the Gaza site is not only for its own history. It was a main gathering ground for fine work from elsewhere, imported for the palace of the greatest ruler in South Syria; these foreign works are here dated by a long succession of palaces, identified with the known history of Egypt, and providing regular levels of the site. Here we can sample and put in historic position the arts of which we have not yet found the sources; and our dating here will serve to clear up the future discoveries in the Eastern Mediterranean." *A.G.* II, p. 11.

PART I

CHAPTERS I–XI W. M. FLINDERS PETRIE

CHAPTER I

TELL EL AJJŪL AND WADY GHAZZEH

1. DURATION OF DIGGING. The second part of this volume gives the accounts by Dr. Ernest Mackay and Dr. Margaret Murray of the work committed to them by the Department of Antiquities; this,

together with the catalogue of finds in the order of discovery, and Dr. Murray's sketches delivered to the Department, completed the official demands. Their plans (pls. I–IV) were levelled from a new zero, 954 ins. over sea level.

The duration of the digging (1938) was only for a short season, beginning in the middle of February owing to official requirements. The subsequent state of the country and the burning out of all our camp and equipment make it doubtful if any further work can be done there. We shall apply to work in a different country, when our excavations are resumed.

In order to complete this volume there remained to be provided, in the following pages, the record in continuity with the previous volumes of *A.G.* I, II, III, IV. In this fifth volume on Gaza the plans of the site and levels of the objects are all computed as usual from sea level, so as to be comparable with the previous work; my drawings and photographs (pls. VI–XXXIX) comprise all the wrought objects, and are described in conjunction with the finds of the previous seasons. There is, moreover, the catalogue of all groups in the order of levels, and thus this volume conforms with the previous publications. It also continues and concludes my series from this great Hyksos site.

2. STAFF IN FIELD. Our fellow workers should be mentioned. Dr. Ernest J. H. Mackay and Dr. Margaret A. Murray conducted the work in the field, and were also responsible for the lists of over a thousand specified objects handed to the Department of Antiquities at the end of the season, for division.

In addition three assistants aided the excavations. With our two selves, we were a party of seven in all.

Mr. Carl Pape, A.R.I.B.A., was able to rejoin the School for a fifth season, and was responsible for the whole of the plans and the plotting. He was zealous in the field, and the plans show in detail his accuracy and the fineness of his work.

Miss Stella van Hollick undertook medical assistance to our workers, and did the innumerable jobs without which a camp cannot prosper.

The work both in field and camp was brilliantly aided by Mr. Leon Kiralfy whose technical skill, and unequalled capacity in so many directions, made us regret that his devotion to flying will alone hinder his taking up archaeology and becoming a first-rate excavator.

My wife laboured with me all day, in archaeological work, for the School. This year she had raised the

funds as always, but budgeted for a more expensive season than usual, and so it proved.

My own occupation was the registration of finds, and groups, and the drawing to scale of all the objects here published, in pls. VIII-XXX.

The diggers, as for many years past, were Bedawy of the wilderness about Beersheba and Gerar, intensively trained by us for seven or eight seasons, under direct control without foreman, and assisted by selected children, girls and boys.

3. HISTORICAL RESULTS. As the present volume marks the probable conclusion of the work of our School on this site, we may here review the historical results of this enterprise.

The work of my researches in Egypt, however productive, had left much still to be explained in the two so-called Intermediate Periods, dyns. VII-XI and XIII-XVII. All that we could find only indicated northern disturbances yet unaccounted for.

It was therefore decided in 1926 to cross the border into Palestine, on my being cordially invited to do so, and I sought the details of those ages in an area where fresh light might help me. As the links with Egypt would be most closely in the south country, bordering on the Negeb, we began exploration in the region of Gaza and the Wady Ghazze. It was a region which had been neglected hitherto, and I wished, from courtesy, to avoid the area of any existing research in other parts of Palestine.

The main results are summarised here and placed in their chronological order.

4. PALAEOLITHIC AGE. The floor of the Wady Ghazze is rich in early palaeolithic tools. When our work boys were not wanted at certain hours, in Ramadan (owing to the men's afternoon rest), they searched the torrent valley for water-worn flints, and each of them brought up a dozen or twenty worked flints, so that over a hundred came in daily. These were loose, without fixed position. A great mass of the best of them was taken to London, and placed in charge of J. Reid Moir, F.R.S.; these are now in one of the basement store-rooms of the British Museum. The remainder we stored at Beth-pelet (Tell el Fara) by paving our desert huts with them, so that we can remove them later on, if required.

The peculiar types are:—massive picks, too large for the grip of one hand, the borer with skew handle, and the heavy chopper with long sharp blade. These are all tools for root grubbing.

As soon as the collecting boys began to bring up mesolithic material, unworn, we stopped rewards,

and gave two days' wages to each boy for showing us his site. These were named after the finders, Ibrahimiyeh, Awadiyeh, Hasaniyeh, and so on, and they were promised the working of them. The settlements were in this way secured, and were worked out in detail by a young geologist, Eann Macdonald, whom we brought out the following season for that purpose.

The series thus obtained ranged from small triangular picks to the parallel-sided hoe and thence on to early copper. It is accounted by continental scholars the most complete series of transition sites (*Beth-pelet* II). It gave a series of forms of pots, showing their development, and culminating in the ledge-handled type. The late flintwork was distinguished by large semi-circular flakes struck off at a single blow from a fixed stratum.

The series of settlements in the Wady Ghazze is prolonged, therefore, through about thirty Sequence Dates or generations. It extends from the age of built houses and slight use of copper (S.D. 60) and through the period of highest skill in flat striking of large single flakes (S.D. 40-50), with straight bars of flint as hoes; till we reach back to the triangular hoe (S.D. before 40) and the earliest wide triangular hoe (S.D. 30?).

The type series is preserved in the Gaza collection, University of London, housed in the Institute of Archaeology (Inner Circle, Regent's Park), London.

5. COPPER AGE. Some ten thousand years ago the Wady Ghazze, the southernmost stream of Palestine, ran down a narrow valley to the Mediterranean, through the old sand dunes which were petrified by gypsum rising from the deeper soil. As a part of the continual fluctuations in the Eastern Mediterranean, the coasts of Egypt and Syria have been moving up and down 40 ft. even since Roman times, as evidenced in Alexandria, and here on the desert edge of Gaza. When the land sank, in the continual rise and fall of the Palestine coast, the sea spread up the valley and formed an estuary with a turning entrance. This made a secure harbour for the small vessels of early shipping, and it was the only port between the Nile harbours and the rocky reefs of Jaffa. Along this estuary were early settlements of the Copper Age. These people were buried with their long copper daggers and ledge-handled pots in simple pit graves, and this civilisation continued until the close of the VIth dynasty of Egypt or pyramid age.

6. CANAANITE AGE. The Copper Age ended. These people were driven out, when Asiatics in a ferment repeated the age-long trek of Caucasus

peoples, and trooped down to seek the wealth of Egypt. By about 3100 B.C. they reached the Wady Ghazze, and began to fortify a bridgehead by the harbour, as a base for the passage across more than a hundred miles of desert, to reach the Nile.

An attack on such a wealthy and civilised land as Egypt needed careful preparation. At Tell el Ajjūl, the ancient Gaza, a camp was laid out 1600 × 1000 ft., defended by a fosse 19 ft. deep. This ditch was precipitous on the outer side, while it rose up to the town by a slope of 50 ft. and was too steep to stand on. It was topped by a wall of black brick-work.

Such was in the best style of Asiatic fortress, like Homs (Emesa) in Syria. The forts of the Hyksos, 1000 years later, were only earth defences consisting of a ditch sloped on both sides, like the Asiatic fort of Geok Tepe where the Turkomans made their last stand.

At the north-west corner of the fort of Gaza, a broad sloping path led down as a portway to the harbour. The region about this proved to be the richest in fine weights, being the centre of trade.

Within the great camp a palace was laid out, on the side nearest the sea breeze. It was planned as a square of 180 Palestine ft. (about 11-in. foot). Along each side was a row of large rooms, 14 to 18 ft. wide and nearly square. The north-east corner held the bathroom, with a drain and a large jar for water. The palace had a stone basing about 30 ins. high, upon which rose the walls of sun-dried brick. When half of this great building had been erected the work was suddenly closed down, only completing the square by a single rude wall without more chambers. This change of enterprise doubtless marks the collapse of the Egyptian resistance, and the success of the invasion of Egypt which rendered so large a fortress no longer necessary.

The invaders, who thus went on across the border to found the VIIth dynasty, brought with them the ribbed daggers and the toggle-pins from the Caucasus. The final decay of their great palace was in part due to a change of climate, with heavy rains. Many feet of soil were washed off the face of the land; a long tunnel was blocked up and partly swept away.

7. EGYPTIAN INVADERS. When the XIIth dynasty Egyptians began to recover Syria they occupied the frontier fortress of Gaza, and a second palace was built on the ruins of the first. This building was smaller, but beautifully constructed of fine yellowish-brown bricks with sharp edges. It also had a bathroom.

8. HYKSOS AGE. The second palace was partly

pulled down for the re-use of the bricks in the third palace, along with coarse black bricks. The walls were roughly arranged, and there was no bathroom. It seems obvious that this rebuilding was due to the Hyksos, the Shepherd Kings. These moved on to Egypt to found the XVth dynasty, overrunning the XIIIth Egyptian dynasty. They were a people coming from the Caspian region, and they also brought with them coarse-ribbed daggers and toggle-pins. Buildings of this period spread over the southern part of the hill fortress. A great tower was built at the side of a deep pit which was intended for a water passage, as in other cities, but was never completed. This town fell into neglect, and its walls were ruined down, while the tower stood high.

On the palace site a reconstruction, with some new walls of coarse black brick, was made by the later Hyksos, who rebuilt the settlement around the great tower. These people overran Egypt, and they established the XVIth dynasty.

9. XVIIIth-XIXth DYNASTIES. By this time the stream-bed of the Wady Ghazze had become silted up and stagnant, mosquitoes bred there, and finally malarial fever must have desolated the town. The XVIIIth dynasty Egyptians tried to reoccupy the site, and they placed a fifth palace here in the reign of Hat-shepsut. They later abandoned it and moved away to build the present Gaza four miles to the north, on higher ground, the old port being useless.

Egypt continued to hold the place, however, throughout the fall of the XVIIIth and into the XIXth dynasty. We found the tomb of the Egyptian governor, under Tut-ankh-Amen, which contained also burials of his descendants under Rameses II. There were moreover a large number of Ramesside burials in the side of the great fosse surrounding the site. The old cemetery thus retained its traditional use, long after the living had moved away to the new city.

After this, we only know of scattered settlers over all the coast between the old and new Gaza, strewing the land with pottery. Tell el Ajjūl has not been a capital city since 2000 B.C., but the place never quite died out, and in the Arab period it was a station of the pigeon post between Baghdad and Cairo.

Some Arabic references to the Tell have been supplied to me very kindly by Mr. C. N. Johns, (then Assistant Director of the Palestine Archaeological Museum).

"Malik al Kamil was encamped at Tell el Ajjūl at

the end of 625 A.H. (A.D. 1227). There he was joined by his brother Malik al Ashraf, who set out thence to catch their nephew an Nasir Da'ūd when he ran away to Damascus in 626 (A.D. 1227-8).

"Later on, in the 14th century handbook *Et T'arīf*, it is referred to as the last beacon in a chain of stations stretching as far as the Euphrates: between Ajjūl and Cairo, messages were forwarded by pigeon post."

"The glazed slip ware from Tell el Ajjūl resembles that from Athlit, and even more closely that from Ajlūn, and both sites we know to have been occupied under the Ayyūbids and Mamluks, 13th-15th century.

"It is possible that the camp which existed then under al Kamil was never wholly abandoned, and was later included in the Mamluk beacon system."

CHAPTER II

SCOPE OF WORK

10. CONTINUITY OF PLAN. The area of the Tell excavated by the School in 1938 lay north of the work of the previous season on this site. The road marked GAL, GAM, GAN in the present volume (plan on pls. II and IV, XXXIII and XXXV) is obviously a continuation of the road marked T, D, H on pl. lxiii in *Ancient Gaza* IV. The junction of the plans was however made difficult, as during the four years that hindrances prevented excavation the site had been greatly altered. Cultivation had swept away all points of comparison; the whole district had been attacked by a sudden land hunger, all paths were ploughed away, what had been grassy slopes were all denuded, even the sterile sand-grit of the great fort bank was deeply cut up. It is well that we began here nine years ago, and obtained satisfactory results during four full seasons, as such work could hardly be done now. Our careful excavation and our reclamation of soil had been followed by total neglect of the site.

11. CONTINUITY OF LEVEL. One of the earliest questions to be settled about the plan is the continuity of the ground level. The surface of our region was denuded in past ages as a drainage hollow on the north, running east and descending to the grit-rock. What however was the original configuration? Looking at pl. XXXIII, we see the long road GAN to GAL is at about 820 ins. above

sea level, and about 800 ins. eastward the foundations are over 820 level, so there is no certain fall to the east. North-west of that, there is the broken line from GBZ to GBC (the levels of which are seen in section 7-8, pl. V). The base of the lower town walls shows no fall; the main hollow of the surface is therefore only a subsequent denudation. The same is seen further west (in section 3-4, pl. V) where there is also no change of level. In the N.W. to S.E. direction there is a fall of 20 or 30 ins., owing to the actual slope of the natural hill.

12. GREAT PIT AND TOWER. The largest feature of the clearance this year is the pit, over 30 ft. square and about 17 ft. deep, surrounded by the more regular building and the thickest walls. This was the main feature of the town, judging from the extra solidity of the square of walls S.W. of the hole; it looks as though, at this corner, there had been a high tower, base 30 × 33 ft. in plan.

Although carefully searched for, no opening below could be found in either the floor or the sides of the pit. Yet in view of the water tunnel system at Megiddo, Gezer, Tell Duweir, and other cities, the best explanation of this pit is that it was designed for water supply. The idea of completing it was abandoned at the fall of the first Hyksos town, and the later, less enterprising Hyksos relied on the river flowing at the foot of the hill. The builders of the second town ignored it therefore and filled up the pit with burials and rubbish. The tower however remained and is still as high as anything of the second town. It seems, indeed, that the tower stood up amid the ruins of the earlier town, and was the main feature of the later town.

13. MEASUREMENTS. In few parts of either town is there any repetition of similar dimensions, and therefore the construction does not bear witness to any planning by measure. We may however note that from the inner corner GGC to the wall S.E. of 715 it is 432 ins. and from the corner GGC to the wall by GGF it is 434 ins. In the upper town, not on the old wall lines, from the projecting corner GJK to the wall near GGA, the measurement is 440 ins., and from GJK to the wall near GGH it is also 440 ins. But we do not see these dimensions elsewhere.

In the time of the VIIth dynasty occupation at ancient Gaza, the Syrian foot of about 11 ins. was in use, and so there would be a length of 40 Syrian ft. in this 440-in. measurement recurring several times, with greater or lesser accuracy. Such scanty resemblances can hardly have value however, unless further corroborated.

CHAPTER III

THE SCARABS. PLS. IX, X, XLII

14. PARTICULARS OF FINDING. The scarabs found in our excavation of this part of the site, like hundreds of Tell Ajjûl scarabs, belong chiefly to the period when Egyptian kings were acting as viceroys under Hyksos domination. They are mostly of XIIIth dynasty. The few accurately dated scarabs, those containing names of the less-known kings, are quite irregularly buried, so far as levels are concerned. The cruder types with rope patterns extend over such a wide range that level of finding means very little. In this region the scarabs appear to have been imported from external sources and indiscriminately buried. The rougher of them are probably Hyksos copies of Egyptian scarabs, and those with royal names are actually Egyptian.

The course of work being shorter this season than in previous years, the supply of scarabs is naturally rather less. A fifth of them were found scattered loose on the ground, without any exact position or level.

In pls. IX and X the serial number is placed as usual in R. top corner. The number in L. top corner denotes registration of daily finds, required by the Department of Antiquities. The number in R. bottom corner denotes level in mound (number of inches above sea level). The letters, or pairs of figures, in L. bottom corner refer to position, in squaring on plans. Any other number placed at middle of base of scarab denotes group (see catalogue of group numbers in the Register of groups, pls. XL, XLI).

AV denotes gold, AR denotes silver; *n.n.* no number; J kept in Jerusalem (Pal. Archaeol. Mus.).

15. ROYAL NAMES AND NEW KING. Pl. IX. No. 1 is copied from a scarab with the name of Senusert II, XIIth dynasty. The scrolls are correctly copied from Egyptian, but the *kha* is incorrectly formed, as the Hyksos copyist often misunderstood hieroglyphs.

No. 2. The high priest of Heliopolis, Ra, named after the god; undoubtedly an imported Egyptian scarab.

No. 3. Neferhetep, king, dyn. XIII, 21 (21st king of XIIIth dynasty).

No. 4. This is the most important scarab found this season, as it gives a royal name hitherto unknown. The scarab is finely cut, and framed in a gold border. It is Hyksos, probably of the XVth dynasty. It reads *Ra se bek neb*. One Ra name is still missing in the list of that dynasty, for that of Shesha, the last king, has not hitherto been found. This Ra or throne name is, therefore, probably that

of Shesha, sixth king of dyn. XV. The most complete list of the Hyksos kings is published in *The Making of Egypt*, Appendix I, pp. 171-172.

No. 5. This gives his personal name, Shesha (dyn. XV, 6).

No. 6. *Ra Kha* or *Ra ta*, a king (?) as yet unknown, or it may be a blundered scarab with one sign omitted.

Nos. 7, 8, 9, all with royal names.

No. 7. *Ra maat ab*, dyn. XVI, 11 (?).

No. 8. *Ra se Kha ne*, dyn. XVI, 14 (?).

No. 9. *Ra oa hetep*, dyn. XVI, 26 (?).

No. 10. Tahutmes III, dyn. XVIII, of whom more scarabs are found than of any other king.

No. 11. Ramessu II, dyn. XIX, 3, also very common.

Nos. 12, 13. These are probably Hittites, from the high cap worn.

16. DEITIES. No. 14. This is an important scarab, as showing the supremacy of the Great Goddess, probably the Mother of the Gods, later called Kybele (see chapters IV, sect. 24; V, 26; VII, 33). That she is dominating the god Horus shows her pre-eminence.

No. 15. The same goddess seated, turning another goddess (?) upside down.

No. 16. A goddess with a tree.

No. 17. Two goddesses in amity. Bezel in bronze finger-ring.

Nos. 18-21. Horus with a crocodile cut in pieces, symbolizing the destruction of evil.

Nos. 23, 24, 25, 26, 31. Horus with uraei.

Nos. 27, 29, and perhaps No. 22. Horus holding a uraeus.

No. 28. Horus and a worshipper with uraeus.

No. 30. Horus holding a flower.

17. FIGURE DESIGNS. No. 32. Male figure between circles.

No. 33. Stone cylinder, incised with figures of a god and goddess, with sun and moon emblems, adored by a worshipper; hare and ox and spirals behind the god.

No. 34. Male figure in Egyptian wig and kilt. The spirals behind him somewhat resemble those in No. 35.

Nos. 35-37. Three scarabs with figures probably intended for Hittites, by the clothing. The Hyksos held the suzerainty of Egypt at this time, but were subject to their overlords the Hittites in Syria, including Palestine.

No. 38. Stone cylinder. Well-known type, of men with raised arms. The figures are alternated with rapiers or daggers (*A.G.* I, xiii, 35, 54). The form of the weapon suggests eastern influence.

No. 39. King with the uraeus on his brow, and holding a flower.

No. 40. Man holding a flower.

No. 41. Man holding uraeus.

No. 42. Woman standing, with uraeus.

See sect. 35, FIGURES ON SCARABS.

18. MISCELLANEOUS. No. 43. Winged sphinx, seated. Bezel with bronze finger-ring.

No. 44. Sphinx seated, with uraeus.

No. 45. Royal title of Upper and Lower Egypt, *nesut biti*.

No. 46. Sphinx seated, with two *nefer*.

No. 47. Head of goddess Hat-hor, adored by two kneeling females.

Nos. 48-50. Heads of Hat-hor.

No. 51. Hawk and two *nefer*, reversed, with spirals.

Nos. 52, 53. Signs without meaning, and spirals.

No. 54. *Ra nefer* and circles.

Nos. 55-59. Imitations of cartouches.

No. 60. Hawk between signs.

No. 61. *Sma* sign of union, with plants.

No. 62. *Sma* sign, and others.

No. 63. Imitation of a cartouche.

Nos. 64-67. Disconnected signs.

No. 68. *Neb ka, ankh*, two uraei and wings.

No. 69. Disconnected signs. Bezel with bronze finger-ring.

Nos. 70-73. Signs between parallel lines.

Nos. 74-88. Meaningless groups of signs. No. 85 is a scarab with feathered legs.

Pl. X, Nos. 89-102. Meaningless signs. No. 93, *nefer*. No. 98 unfinished, as the brown frit is not yet glazed.

Nos. 103-106. Row of signs. No. 103, scaraboid.

19. ANIMAL DESIGNS. Nos. 107-112. Lions walking, and seated, with uraei. A strange fantasy is the making of animal tails into uraei (Nos. 110-112).

No. 113. Lion couchant.

No. 114. Hawk-headed sphinx, Horus, with uraei.

No. 115. Boar walking. Archaic Greek work.

Nos. 116-120. Deer.

No. 121. Goose and signs.

No. 122. Hawk. Nos. 123-126. Hawks between uraei.

No. 127. Unintelligible. No. 128. Two crocodiles, cut in pieces.

No. 129. Scarab beetle between scrolls.

20. PATTERNS. The following more mechanical patterns seem to have been used simultaneously, without any chronological order, and this probably shows an irregular importation from different centres.

Nos. 130-132. *Nefer* sign in spirals. No. 131, blue paste.

No. 133. Scroll group. Bezel of bronze finger-ring.

Nos. 134-142. Scrolls (Nos. 135-141 with signs).

Nos. 143-146. Continuous scroll patterns.

No. 147. Scroll and cross pattern.

No. 148. Beautiful closely incised plant groups.

No. 149. Curved bands, interlaced.

Nos. 150-157. Degraded bands, interlaced.

Nos. 158-162. Interlaced band patterns, angular.

Nos. 163-170. Band degrading to a twist.

Nos. 171, 172. Unintelligible (No. 171, blue paste).

Nos. 173-178. Concentric circles.

No. 179. A scaraboid of white paste, design unintelligible.

No. 180. Seal impression on baked clay, conical stamp.

21. PHOTOGRAPHS OF SCARABS. Pl. XLII shows photographs of many of these scarabs, on three plates. By mistake, we omitted to take a fourth photograph.

The following list gives the numbers of those which were drawn in facsimile only, and were not photographed:—

Nos. 1-20, 22-46, 71, 75, 93, 100, 114, 136, 142, 164, 176.

Pl. A (*frontispiece*). No. 3. Pottery scarab, frog, uninscribed.

[Pl. XLII also shows two examples of water storage for comparison. The great Hyksos water jar found at Gaza, with its lid and dipper, has a modern counterpart. The native village jar at Ram'allah and Sinjil, painted red in patterns which have survived thousands of years, is always accompanied, similarly, by its saucer-lid and dipper. I am indebted to Mrs. G. M. Crowfoot for the photograph.

A snapshot below shows our camp store-room, with a Chinese and an English student at work, and a dim view, beyond, of Flinders Petrie drawing the plates for *Ancient Gaza*.—H. P.]

CHAPTER IV

A PEDLAR'S HOARD OF GOLD

22. GOLD AND SPICES. In the present season, 1938, a hoard of old goldwork was discovered, like that which we got here in 1934 (*A.G.* IV, xiii, xiv). Both of these hoards were found in broken pieces of crock which had been placed in ruined rooms on rubbish. Both of them had the thinner objects doubled up for packing, ready to be melted up.

They seem to be pedlars' stocks of gold received in exchange for some valued commodity.

These must be looked at in connection with the profusion of small weights at Gaza; the usual amount of each weight was about half an ounce, as many smaller as larger. Rarely did we discover a weight as heavy as half a pound. Ancient Gaza was therefore a mart for very valuable products and, as there was no currency at that time, disused and damaged ornaments of gold served for purchase in the local trade.

Now Gaza was the point of contact for Arabian trade with the Mediterranean. The spice trade came up from Hadhramaut in seventy days to 'Aqabah, which is described by Strabo as "opposite to Gaza" (*Hist.* xvi, iv, 4).

As the objects found here link with some found in Syria at Ras Shamra, and also in Crete, and even with others north of the Black Sea, they must be taken as evidence of trade all down the Syrian coast.

We are so much accustomed to cheap transit of foreign commodities that we do not realise how valuable spices were, anciently, and even in the Middle Ages. In A.D. 1309 the pepper for a great feast cost £28, the price of thirty oxen.

The largest cache of goldwork (group 277) was found beside a house nearly washed away, and lay 1-2 ft. below the surface. Head fillets and their rosettes, pendants of several sorts, ear-rings, scarab rings, star decorations, toggle-pins, all lay there together. It was evidently the hoard of some pedlar travelling down through Syria, exchanging a small but precious commodity for out-of-date goldwork and broken fragments of personal adornment.

23. GRANULAR TECHNIQUE. Pl. VI and (*frontispiece*) colour pl. A, B. LIST: GOLDWORK OF HOARD, Nos. 1-20. Group 277, found at GDF, 921 ins. level, see plan of upper town, pls. XXXIV-XXXV:—

There were many specimens of the granular goldwork, once so rare but found not infrequently in this favoured site.

Nos. 1, 3 (B.20). Pendants of granular work, flying falcon. A pair of spread falcons covered with coarser bosses of granulation all in brilliant condition and glittering, thin punched foil glistening but poor workmanship. The inner wing is marked by granulations in triangles, the outer wing by granules in rings of wire. This is the same design as the falcon pendant published in *A.G.* I, xv.

No. 2 (and pl. VIII, 4). A larger form of the falcon, of brassy gold and heavier, showing a new technique not granular, with wire outlines not filled in, perhaps left incomplete.

Nos. 4, 5 (B.23). A pair of heavy crescent ear-rings of granular work. They are on bossed plates of ruddy gold, 1½ ins. across, back and front, attached together; they were decorated with 12 and 19 bosses of massed granular work, and the edges gay with little peaks of pillules.

These are test examples of granular technique, as the granules are fixed by autogenous welding, without any free solder. The piles of granules are bounded by rings of wire, and it shows a less skilful method than that in the rather earlier specimens of the previous season (*A.G.* IV, xiii, xiv, 30, 31).

24. DETAILS OF THE CACHE. Nos. 6, 7, 8 (A.10). Three large eight-pointed star badges, seemingly designed for some order or decoration. These had a central boss and punched mid-ribs, and top bar rolled over as a loop for suspension. Each ray is beaten up separately by swages, and in No. 8 the form is reinforced by edging lines done with a small chisel. The top loop is made with a wire edging, to prevent it from splitting (*see* pl. VIII, 3, 5).

No. 9 (B.14). Bulla, a globular bauble with loop, formed of two hemispheres swaged into shape.

No. 10 (B.24). Three ribbed hollow ball beads, edged with rings of wire. These show connection with the Caucasus, as also No. 11 following.

No. 11 (A.5). A diadem of gold foil. This is a semi-circular tiara, 16 ins. long; the front view is placed below it. The narrow fillet of gold has ten tubular projections which are soldered collars, each containing a delicate rosette of gold foil. The rosettes were quatrefoil with punched borders, and only one tubule had lost its petals. For a similar headband, *see A.G.* IV, xiii, xiv, 7.

In addition, we found eight cinquefoil rosettes, No. 18 (A.6), which had probably been stitched on to a linen band, to form a diadem. These florets were well modelled, brilliant, 1 in. and ¾ in. diameter, with central boss; each petal was outlined with 20 small punch marks and the centre pierced on each foil with 4 stitch-holes, and some duplicated.

Both headband and ornaments are of the greatest interest as they resemble objects found in the Caucasus, at Maikop Kurgan, 130 miles east of the Sea of Azov. These consisted of a narrow gold headband with cinquefoil rosettes, along with fluted gold beads of the same style as the fluted beads, No. 10, above named. They are published by Professor Hančar in his *Urgeschichte Kaukasiens. Taf. xlii*, pp. 70, 71, 410. They are dated to 1600-1500 B.C. At Gaza the tiara is of late Hyksos period, approximately 2000-1600 B.C., and thus may well be of the same age. See also three other

stitched rosettes in group 447 (*A.G.* IV, xx, 159-161).

That there was a trade route round by the Ukraine, Dacia, and Anatolia to Syria and Egypt is indicated by the extension of various patterns as early as 2800 B.C. (see *The Making of Egypt*, pp. 123-124, 131). We cannot yet say at what place along this route these gold tiaras were made, but as we find them in the Caucasus and Palestine, they probably originated in North Syria.

No. 12 (B.17). The plaque of a Mother Goddess of the Hat-hor type resembles some at Ras Shamra (*R.S.* p. 48) and is like one in our previous hoard (*A.G.* IV, xiii, xiv, 9). It has the punched spot border like another (No. 8) which seems to be earlier in design than the cross-lined border of No. 13 following. The plaque (No. 12) is of sheet gold, punched, triangular in shape, $3\frac{1}{2} \times 2$ ins. with Hat-hor head, details of body, and a hatched edging.

Two lesser mother goddesses, one with Hat-hor curled wig, showed the same character. They have loops for suspension, and are all amulets of fertility.

No. 13 (B.17). This is a clumsy version of the best type (*A.G.* IV, xiii, xiv, 8), but the cross-lines show it to be later. The face has the same strangely impersonal chill expression.

No. 14. A plain sheet of gold with hardly any traces of the type. It was broken and doubled up as useless, to await melting.

No. 15 (A.4). Solid finger-ring of gold, in Egyptian style with frame for scarab mounted, wired through and twisted round it; broken and thrown aside for melting.

No. 16 (A.7). Toggle-pin, ribbed like one in *A.G.* IV, xiii, xiv, 21.

No. 17. Gold and silver ear-ring, broken up.

No. 18 (A.6). Cinquefoil rosettes, described above, with quatrefoils (see No. 11).

Nos. 19, 20 (B.15). Two golden twists, both with a pair of ovate leaves with entwined stem (see *A.G.* IV, xx, 144). Each has a similar punch spot and traces of lines of veining, and is of delicate work and true to nature. These are exactly as found in Crete, dated to Early Minoan II (Pendlebury, *Archaeol. Crete*, pl. xiii, 1). These are therefore of VIIth-Xth dynasty period.

The foregoing list concludes the pedlar's hoard.

In general, we may notice that crescents, which were usual in our finds of 1934 (see groups 447, 1299, and 1312), are absent, with the exception of one pair of ear-rings, in the finds of 1938. It might be supposed that the collectors of old gold of the later hoard had not visited some centre of crescent gold-work.

CHAPTER V

STANDARDS OF WEIGHT OF GOLD

25. UNITS INFERRED FROM AMOUNTS. In the table of Weights of Goldwork (pl. VIII) an attempt has been made to trace how far the specimens could be referred to some definite standard. Each group of horizontal lines indicates a separate category of the designs named Mother Goddess, Star, Granular work, and Toggle-pin. The columns serve to separate those that may be attributed to different standards. The numbers IV and V bear reference to the volumes *A.G.* IV and V, and are followed by plate nos. (xiv, vi, &c.) and by Arabic figures which refer to the numbering of the objects found on pls. xiv, xvi, xviii, xx in *A.G.* IV, and pls. VI, VII, VIII in the present volume. The next column states the actual weight of the object in grains, followed by its multiple.

The conclusions that may be drawn are the following:—

26. GODDESSES AND STARS. Mother Goddess. The two plaques (V, vi, 13, and IV, xiii, xiv, 8) of Kybele type are of 219.8 and 298.6 grains. The standard of these appears to be the *Qedet*, $1\frac{1}{2}$ Q. and 2 Q. respectively.

Hat-hor. The two plaques of Hat-hor type (V, vi, 12; viii, 1, and IV, xiii, xiv, 9) are of 126.0 and 92.2 grains. The first is obviously of the *Daric* standard, 1 D. and the second is of $\frac{3}{4}$ D.

Star. The examples of this vary so much in weight that it is difficult to assign them to any particular standard. The attribution of these is uncertain, therefore. The small star (V, vi, 6) is 67.5 grains, half *qedet* (?). Others (IV, xiii, xiv, 14, 15) being 138.2 and 143.0, both one *qedet* (?), seem to belong to the same unit. The large star (V, vi, 7, and viii, 6) weighs 105.5 grains, half *beqa* (?), and the lesser one (V, vi, 8, and viii, 5) is 112.0 grains, half *sela* (?). Another form of star on pendant disk (IV, xvii, xviii, 112) was of 62.6 grains of half *daric* (?).

27. GRANULAR WORK. We may at once notice different types of granulation. There is the grouping in a disk, sometimes with a wire border surrounding. Also there is the triangular grouping. The varied patterns, however, are not confined to any one standard of weight, so they are irrespective of provenance and the varieties only concern changes of fashion.

The most usual standards for this class of workmanship are the Egyptian *Qedet* and the Persian *Khoirinē*. The *qedet* is found only in the examples in *A.G.* IV. Two of these (IV, xiii, xiv, 26, 27) are miserable failures in the art of granulation.

The source of the art of granular goldwork seems to have been North Syria or Persia, as the larger number of examples of fine workmanship must be attributed to the *Khoirinē* standard of those countries, though some were manufactured on the Egyptian standard also employed there.

Of the five examples of *Qedet* unit, one pair of ear-rings (IV, xiv, 26, 27) are of half *qedet* weight, and another pair (IV, xx, 132, 133) and a single one (IV, xvi, 67) are of one *qedet*.

Of the five examples of *Khoirinē* unit, the falcon pendants (V, vi, 1, 3) are of half *khoirinē* each; and the ear-rings (IV, xiii, xiv, 28, 29; xv, xvi, 51, 52; and V, vii, 23, 24) are one *khoirinē* each pair.

There is also an example of *Daric*, the falcon pendant (V, vi, 2), one *daric*.

There are three examples of *Bega* unit, the pair of ear-rings (IV, xiii, xiv, 30, 31) and winged ear-ring (IV, xvii, xviii, 90) half *bega* each ear-ring.

Only one example occurs of the *Sela* unit, a pair of ear-rings (V, vi, 4, 5), one *sela* each ear-ring.

28. UNITS IN TOGGLE-PINS. These ornamental objects were for the attachment of clothing. They show much variety in size and decoration. They are found in bronze, silver, and gold. The gold ones are based on the *Qedet* and *Khoirinē*, two of the units most used for the granular work; and also on the *Daric*.

Two (IV, xiii, xiv, 21; xvii, xviii, 98) are approximately of $\frac{1}{3}$ *daric*; one (IV, xiii, xiv, 23) is of half *daric*.

Of the *Qedet*, three are of one *qedet* (V, vii, 26; IV, xvii, xviii, 111; xix, xx, 138), and one of half *qedet* (V, vi, 16).

Two examples of *Khoirinē* are shown. One is of quarter *khoirinē* (V, vii, 35), and one is of half *khoirinē* (IV, xvii, xviii, 123).

There is also a toggle-pin (IV, xvii, xviii, 110) which may belong to the *Necef* unit, as it weighs 78.3 grains. This may be a half *necef* but the standard is uncertain, as the weight is falsified by the addition of an ornamental head.

CHAPTER VI

OTHER GROUPS OF GOLDWORK

29. GOLD RINGS OF IRISH ORIGIN. Pl. VII, figs. 21, 22 and see also *colour pl.* B.16. We were fortunate enough to discover once again some of the beautiful goldwork of Irish design and Irish work-

manship. It is noticeable how the goldwork of Irish form is peculiarly brilliant and rich in tint; it never needs washing, and the less it is handled the better. This appearance is probably due to the absence of silver in the source, and it suggests that Irish gold was also used for the large ear-rings (pl. VI, 4, 5) and the rosettes, which share the same quality and glitter.

No. 21. Group 170. Twisted gold ear-rings, made of four-flanged strip, spirally twisted in the Irish method.

No. 22. Another four-flanged strip, twisted, with the edge deckled, to increase the reflections. Rings such as these, $\frac{3}{4}$ in. across, are composed of twisted flanges whose spiral edges are minutely nicked, so that the ornamental indentations catch the light as well as the glittering strips of ruddy gold which bear them.

30. EAR-RINGS, TOGGLE-PINS, AND RINGS. Valuable pieces of goldwork of the Late Hyksos age were also found in minor groups. These were mostly from sporadic graves at the edges of the town ruins.

Nos. 23, 24. Ear-rings of a duller gold, 1 in. across and hollow. The wide bulgy crescent is decorated with a dozen chevron bands of granules crossing the surface and bordered with granular rims. The tips of the crescent meet by a sliding bolt to close the gap; the bolt was probably intended to pass through the pierced lobe of the ear, as there is a knob on the bolt by which to push it.

Nos. 25, 26. With these ornaments there lay two toggle-pins, a form of dress-fastening which betokens a Caucasian origin. No. 25, silver toggle-pin with twisted shank. No. 26, gold toggle-pin, $2\frac{1}{4}$ ins. long, ribbed and knobbed with fluted ball head.

No. 27 (A.2). A pair of ear-rings of gold and glass was of the cruciform variety found here four years ago. On a gold plate backing, the limbs are inlaid with glass in circular ouches or frames, the central one being oval. Above the intersection are placed two ouches with a globular filling. The lower limb is shaped as a ram's head with triangular inlay ears and horns. The ouches are ornamented with a border of the minute gold pellets characteristic of granular goldwork. This socket border shows adhesion of granules without free solder.

The attachment for suspension is a massive gold hook, $1\frac{1}{4}$ ins. long. The inlay of three limbs is in concentric circles, purple (?) and blue. Length $2\frac{1}{2}$ ins. Position at $2/3$ plan, 793 level.

No. 28. Group 673 (A.2). Another pair of the splayed ear-rings, with disk and triangle inlays, more closely resembled those we found for the first time

four years previously, on this site. A larger pair (?) has since been found at Megiddo. These ornaments are similarly of inlaid glass, ending in a ram's head. The upper limb is a roundel, with the glass inlaid in concentric circles, purple (?) and blue. The side limbs are triangular wings with two globules where they join the oval centre. The ram's head is delicately worked and chased with chevron hatching; it has spread ears and the horns joined across the long snout. Compare *A.G.* IV, xv, xvi, 51, 52, where the centre is circular and not oval. Position at A/E plan, 852 level.

Nos. 29, 32. With this pair there were two sets of intertwined gold torque-like ear-rings with spiral twist, smoothly grooved, dull red-gold, elegant. The grouping is of three rings independently placed on one ring. A similar pair, separate.

Nos. 30, 31. Single rings of the same pattern.

No. 33. Group 340, G. Pair of plain smaller tube rings, ornamented with five attached balls soldered, one ball missing, but other examples (as in pl. A.1) are complete (as *A.G.* IV, xvi, 70, 71). Position at 2/4 plan, 905 level. There were also two plainer ear-rings of heavy gold. A head fillet with several joins ended in a couple of eyes, of the modern hook-and-eye pattern.

No. 34 (A.11). Group 185. Pair of ear-rings with granular rings on the crossbars. Probably glass rings, now decomposed, had alternated with gold (see *A.G.* IV, xviii, 96, 97).

No. 35. Gold toggle-pin, with twisted square shank, from B/E plan, level 835 (see *A.G.* IV, xviii, 98).

Nos. 36, 37. Group 351. Pair of spirally twisted ear-rings, cord twist, and two very small ear-rings, for a baby (?), also twisted and of bright yellow gold; position B/H plan, level 875.

Two other pairs, one ornamented with disk beads of granular work, strung on a gold wire twisted round the solid tubular ring (165).

No. 38. Plain finger-ring, not closed.

No. 39. Ear-ring, ends self-closed, with scarab of dyn. XV. Position B/M plan, level 837.

Two gold ear-rings, as fig. 33, but single ball only.

Group 713, not photographed. Two gold ear-rings, as fig. 33, but single ball only. Two tubes of gold, with edges hammered; one still retained on it a globular bead of whitened glass. One barrel bead of carnelian, one of garnet.

31. SILVER. More information may be gained, later, from the silver of the 1938 hoard. Five hand lumps are waiting to be separated, the chloride

corrosion having made them each, practically, one solid mass. The best method of separation has to be devised, for a long soaking in citric acid proved useless.

CHAPTER VII

MYTHOLOGY OF THE GOLDWORK AND SCARABS

32. NATURE OF VARIOUS GODDESSES. The most distinctive matter in the ancient beliefs embodied in the remains at Gaza is the evidence of worship of a Mother Goddess. This is shown in the occurrence of the figures in sheet gold of the Great Mother and kindred divinities. Several of these lay buried in the hoards discovered in the town.

In tracing connections of this worship, we must begin by discriminating the different classes of primary goddesses.

The worship of beauty comes first to mind, as it was dominant to the Greek in the form of Aphrodite, the beauty of Nature in all ways.

The Roman ideal was more social, and Venus had titles of *expiatrix* and *verticordia*, as appeaser; she was also known by the titles of *nikēphoros* and *victrix*, as conqueror, but never by the title of Mother.

The worship of Kybele extended over the western half of Anatolia.

In the same region was yet another type of goddess, the nutritive deity of Ephesos, Artemis of the Ephesians, representing the power of Nature to support all life.

The adoration of the Mother of the Gods was found eastward in Georgia, but there she took on the names of Ainina or Anaitis on the Armenian side, and Nana on the Semitic (W. E. D. Allen, *Hist. Georgian People*, p. 39).

Between the eastern and western regions there comes the Syrian land which was the source of the small goldwork borne south to Gaza. The types of the deities represented are none of those above mentioned. Six or seven examples were found in the pedlars' hoards. Two of the plaques (pl. VI, 12, and *A.G.* IV, xiii, xiv, 9), also possibly the small plaque (pl. VI, 14), show the Hat-hor type. The two larger and later plaques show the Mother of the Gods (pl. VI, 13, and *A.G.* IV, xiii, xiv, 8).

A different style of figure, delineated in the manner of the plaques, represents another type; and there is yet another in the goddess (?) with the collar and kilt (*A.G.* IV, xiii, xiv, 6, and xix, xx, 134).

33. THE MOTHER OF THE GODS. This goddess was brought to Rome in the form of a venerated stone, from her temple at Pessinus in Galatia. Her temple on the Palatine is still complete in plan, a shrine for this sacred emblem, and is the oldest temple in Rome. The translation was in 204 B.C., dictated by the Sibylline Books. The fullest account of her worship is given by Strabo (*Geog.* x, iii, 12). It was allied with orgiastic practices in the west, and in the east it was united with that of Kybele.

The two plaques of the Mother Goddess found in Gaza have been already mentioned in sect. 24. See *A.G.* IV, xiii, xiv, 8 (also p. 6, sect. 14), describing the plaque of that season:—

“The face is carefully worked, with a curiously impassive expression, remote from human feeling. If we can credit such intention of the artist, the idea might be the impartial rule of reproductive Nature. The work is punched, and dressed in lines with a sharp chisel 0.25 in. wide: the plate is stiff and rather pale.”

The present plaque is very similar, pls. VI, 13, VIII, 1, and shown in *colour pl.* B.17. The goddess has an entirely impersonal, stony air, as of a face on a menhir. It seems to belong to a primitive idea which may best be expressed by the title “Mother of the Gods” denoting Rhea, the daughter of Heaven and Earth, and mother of Zeus and Poseidon, “remote from earthly passion.”

The importance of the Mother Goddess shown in the goldwork seems also borne out by some of the scarabs of this age. This is seen on pl. IX, No. 14. It represents a goddess holding two flowers, standing over Horus and apparently dictating to him. None but Rhea, the Mother of the Gods, could thus appear, dominating Horus the great god of Egypt. No lesser goddess could be named as threatening him. The majority of the female figures found on scarabs may perhaps be accepted as Rhea, especially those holding flowers or branches in their hands.

34. GODS OF THE NORTH AND SOUTH COUNTRY. Baal was commemorated as Pha-nebal, “presence of Baal,” and was worshipped up the Syrian coast. With this is possibly connected Theouprosoyon, “the Face of God” or beholding of God, from which the great insulated headland north of Beyrut takes its name.

The corn and wine god is best known in the Baal of Ivriz in the Taurus.

The gold pendants representing flies, figured in pl. B. No. 26, and VIII, 2 may symbolize Baal-zebub, the god of flies.

A chief god of the southern country was Marna or

Marnas, “Our Lord,” who was a “god of growth and fertility” (S. A. Cook, *Schweich lect.* 181), and was worshipped in his great temple at Gaza. His name is found across in Trans-Jordan and northward to Cyprus. He was probably identified with Pha-nebal. There are examples, on scarabs, of two figures joining hands or holding a plant. These may represent the union of the southern Marna and the northern Pha-nebal, similar and co-equal, as there are no suggestions of inequality, nor of differences in signs or emblems.

35. FIGURES ON SCARABS. Next after the goldwork, the main material for the mythology of the Hyksos Age is in some of the types of scarabs. A minority of the scarabs are of purely Egyptian style and subject, and need not be considered here, being casual importations. The majority are certainly Syrian in origin.

Out of 1200 scarabs altogether found at Gaza, nearly 250 are incised with figures of gods or animals. The general classes are:—Male figure 36, pair 9. Female figure 18, pair 7. Hat-hor head 24. Horus hawk-headed 38. Horus hawk-headed, pair 2. Hawk 21. Sphinx 20. Lion 18. Crocodile 16. Other animals 34.

Of the male figures, No. 39 is a king, with uraeus on brow, holding a flower. This cannot be Horus, who is hawk-headed, nor can it be the corn and wine god; it is probably Marna. The holding of a flower, or a branch, may be the token of a god of vegetation. The male figures, Nos. 23, 24, 40 and 41 (pl. IX), would seem to represent Marna, holding a flower or branch, or holding uraei, the emblems of fertility and royalty.

There are five figures which are probably of Hittite deities, as they wear the dress of the Hittite overlords. Two of them were found in previous seasons (*A.G.* II, vii, 74, and IV, xi, 395) and three more now appear (pl. IX, 35, 36, 37). Two of these are inscribed with the field sign, which may refer to a god of cultivation.

The dominant female figure, as we have noted, is the Mother of the Gods. The next most generally portrayed of the goddesses is Hat-hor, borrowed from an Egyptian source; the whole figure is never shown on scarabs, only the head (pl. IX, 47–50). Other examples occur (see *A.G.* I, xiii, 56, 57; *A.G.* II, vii, 6; *A.G.* III, iii, 39, 105, 108, iv, 153; *A.G.* IV, v, 15, 38, vii, 155, 182, 217, 226, xi, 409, 410, 411). Of figures of Hat-hor in the round we found none in gold, but three small specimens cast in lead.

The hippopotamus goddess, Ta-urt, only appears

once (*A.G.* II, vii, 12). Other figures are shown kneeling on a lion (*A.G.* III, iii, 89), with Egyptian crowns (*A.G.* IV, xi, 400), seated with an inverted female before her (pl. IX, 15), or with a crocodile (*A.G.* III, iv, 144).

Horus and the hawk of Horus are the most popular of all deities, owing to Egyptian influence. Horus, dominated by Rhea in No. 14 (pl. IX), dominates a female deity (?) on another scarab (*A.G.* I, xiii, 82). The most usual figure is Horus with uraei (pl. IX, 27-29; see also *A.G.* I, xiii, 29, 52, 59, 60, xiv, 167; *A.G.* III, iii, 19, iv, 137; *A.G.* IV, v, 40, 64, 79, ix, 319, 336, xi, 397). The hawk is usually with uraei (pl. IX, 123-126), these being an assertion of his royal power. The next in frequency is Horus triumphing over a dismembered crocodile, to show his domination over evil (pl. IX, 18-21; see also *A.G.* I, xiv, 124, 165; *A.G.* IV, xi, 396). He seldom holds the flower or branch, so frequent with Marna.

The Sphinx is familiar in twenty examples. He is usually standing or walking (*A.G.* I, xiv, 84; *A.G.* II, vii, 63, 102; *A.G.* III, iv, 145, 192; *A.G.* IV, v, 48, xi, 401, 402). He is occasionally sitting upright (pl. IX, 43, 44, 46), or couchant (*A.G.* II, vii, 93; *A.G.* IV, v, 6, vii, 223, ix, 287). Sometimes he is hawk-headed (*A.G.* I, xiv, 133). This is not likely to refer to Horus, as the sphinx is very rarely, if ever, hawk-headed in Egypt. There are also examples of gryphons (*A.G.* II, vii, 24; *A.G.* III, iii, 66, iv, 123).

Of animals, the lion is the commonest, generally walking (pl. X, 107-112). It is also seen couchant (*A.G.* I, xiv, 169, 170).

There is nothing to associate the lion or any other of the animals on these scarabs with a divinity, but some of them may be connected with beliefs of the Hyksos period. Our knowledge of these beliefs is as yet fragmentary. In considering these deities, however, we note principally the prominence of the Mother Goddess, and of the Syrian lord, Baal, even Horus himself appearing as a subordinate influence.

CHAPTER VIII

BRONZE WORK

36. DAGGERS AND LANCES. Pl. XI. *Daggers.* These examples of the bronze daggers are placed in order, according to the level at which they were found.

No. 1 has a slight socket with three rivet holes. It was found 767 ins. above sea level. This form is of an early type, and occurred in previous seasons at much the same level. See *A.G.* IV, xxvi, 268, at 760 level, and *A.G.* I, xvii, 33, at 715 level.

Nos. 2, 3, 4, 11 have plain tangs, which long continued in fashion. These are found of all periods; and for the long flat tang forming a handle, with wood or bone riveted on, see a similar make of dyn. XXII in *Beth-pelet* I, xxxviii, 234.

No. 5 (tomb group 2000) has a handle inlaid like that in *A.G.* IV, xxviii, 295, but between rivets. This is of an eastern type, perhaps from Persia. The present example is from 840 level, and the former example from 846 level.

Nos. 6 (tomb group 2093) and 10 have a sheet metal collar wrapped round the socket, to prevent the wooden shaft from splitting. These were at 855 and 948 levels; one in *A.G.* IV, xxviii, 295, found at level 846, has the wrap on the inlaid handle.

No. 9 (tomb group 2102) has the tang with raised edges, to grip the two pieces of wooden handle let in on either side.

Pl. XII. *Lance-heads.* These are of very common occurrence, while the arrow-head is hardly known here. The blades are placed in order according to levels, which extend from 685 to 963. They occur in groups of levels, as 3 in 767-787, 6 in 822-829, 6 in 834-907, while 11 in 922-979 denote the destruction of the second, or late, Hyksos town. These main divisions are marked on the plate. The narrower rhombic form in Nos. 36-39 is late, otherwise there is little change. No. 44 found in wall.

37. ADZES, BORERS, KNIVES. Pl. XIII. The adze, Nos. 45-47, was a very usual tool, being in use both for wood and stone work. No. 45, of level 789, resembles that in *A.G.* IV, xxv, 256, of level 750.

The large curved knives, Nos. 48, 49, are of a rare form, bordering on Egyptian work of the XVIIIth dynasty.

The borers, 58-67, are circular with a square shank for the handle; as they would not cut a hole like a rymer, but only force it, they must have been for leather work.

Chisels, 50-52. The little chisels, 53-57, were for cutting stone or more probably wood. No. 68, uncertain.

The little double spatulas, 69, 70, may have been for modelling wax in the *cire perdue* process.

A razor blade, 71, is of the usual form.

38. TOGGLE-PINS. Pl. XIV (A.7). The toggle-pins are arranged by levels, under each of the varieties as hitherto classified (*A.G.* I, xx, xxi;

A.G. II, iii, xviii; *A.G.* III, xxiv; *A.G.* IV, xiv, xviii, xxxiii).

The toggle-pin is a long pin with middle hole for attachment, to be put through a loop (as in the toggles of bunting) to prevent its withdrawal.

Nos. 72-76 are all with twisted shanks, spiral. This appears to be one of the earlier types, and is frequently found in silver.

No. 77 has a ribbed ball head. Nos. 78, 79, ball head with ribbed shank.

Nos. 80-84, plain forms with ball head and smooth shank.

Nos. 85-96, ribbed shanks, and associated.

Nos. 97-100, small, plain. Nos. 101-109, small, mostly ribbed.

Nos. 110-122, long toggle-pins with plain shanks.

No. 122, square shank. No. 123, long, with eye at top.

Nos. 74 and 81 are of silver, and the remainder of bronze.

39. OTHER OBJECTS. Pl. XV. Needles. Twenty or thirty bronze needles, 3-8 ins. long, were found in this part of the mound. They vary in form from the simple hook to the pierced eye. The wire is often flattened out, to facilitate the piercing.

No. 153 is part of a netting-needle. No. 154, a pair of tweezers.

No. 155 is a thin disk with turned-up edges.

No. 157 is a finger-ring with a magnesite cylinder for bezel.

No. 158 is of silver.

Nos. 159-165, bronze rings and loops.

No. 166 is a stud of gold plating.

Pl. XVI. Plain rods of bronze, 169-191, usually pointed, were employed for many purposes. No. 193 is a handle, with riveting to fasten it on a bronze vase.

No. 194 is the only fish-hook found.

There are no netting-bones for the construction of fishing nets, so it seems that fish was seldom eaten. Two thousand years later, netting-bones abounded at Anthedon, over the Egyptian border.

No. 197 is oval in form.

No. 200 is of copper.

No. 201 is a grater for food, and No. 202 a funnel.

Pl. XVII. No. 203 shows the form of a pair of silver dishes, which were found in the second or late Hyksos town.

Nos. 204 and 211 each represent a pair of bronze bracelets; Nos. 205, 206, bracelet and ring.

No. 207, brooch (see *A.G.* IV, xxxv, 554, 556, 557).

No. 208, duck's-head brooch; the dotted line shows the place of the pin.

No. 210 is a less usual piece, and represents a horse-bit of a well-known type. The mouth-piece is hinged, and the cheek-pieces have studs on them to hold the reins. The side view is seen in No. 209, to show the pegs and the upper knob which is hollowed as a ring.

No. 212 is an ear-ring in silver.

Nos. 213-215 are of lead.

No. 214 is a leaden ear-ring; the lead is square cut and twisted spirally.

DETAILS OF WEIGHTS AND ANALYSES

postponed from former seasons.

40. DETAILS OF WEIGHT OF ANKLETS. *A.G.* II, p. 8, and pl. xv, 88, 89. Two pairs of heavy bronze anklets, weighed before cleaning, Pal. Archaeol. Mus.

Nos. 1067, 277 (*Mus. Cat.* Nos. 32, 1910, 1911) weighed 150.0 and 166.618 grammes respectively, or 2315.7 and 2572.1 grains.

Nos. 1074, 319 (*Mus. Cat.* Nos. 32, 1927, 1928) weighed 194.132 and 193.301 grammes respectively, or 2997.0 and 2984.1 grains.

Those in England, Nos. 1074 and 1067. No. 1074, as found (?), and 2646.9; cleaned, 2695.8 and 2579.8 grains (67.1); original, 2740 (?) and 2620.

No. 1067, as found, 2732.4 and 2922.0; cleaned, 2584.6 (147.8) and 2720.4 grains (201.6); original, 2680 and 2860.

Red oxide is 11 per cent. gain, and green carb. 42; say, 30 per cent. on above.

41. ANALYSES OF METAL. *A.G.* IV. National Physical Laboratory, Teddington. November 20 1935.

"We have now examined the specimens from Tell el Ajjūl. Only two of the adzes were examined, and they gave the following results:—

"*Adzes.* Unnumbered specimen: Copper 93.80 per cent., Arsenic 2.17, Iron 1.51, Nickel 0.03. No. 750: Copper 97.57, Arsenic 0.86, Iron 0.19, Nickel 0.03 (*A.G.* IV, p. 10, pl. xxv, 256).

"*Pin.* Copper 92.23, Arsenic 1.68, Iron *nil*, Nickel 0.03.

"*Coil of wire.* Copper 91.20, Arsenic 0.88, Iron 0.27, Nickel 0.19.

"The most curious result was obtained from the ring; this on cleaning up had the colour of brass, and on analysis proved to be a brass.

"*Ring.* Copper 84.01, Zinc 15.39, Lead 0.62, Iron 0.12, Nickel 0.05.

"These analyses are all made on sound metal which had been freed from corrosion products. We have never had a true brass from any of these ancient

deposits before, and the result is very interesting. Is it possible that this is of later date, and has found its way by accident into the collection? No silver was found with the copper.

"The *lead rod* marked 954 contained:—Lead 97.63 per cent., Copper 0.26, Iron, trace.

"The *bar of solder* gave:—Lead 38.87, Antimony 3.05, Tin 57.74, Copper 0.23, Bismuth, trace, Iron, trace. This is a true solder of quite modern type.

"I have not yet made any separate analyses of the corrosion products, but the effect which you describe, the original surface marking being found intact under the scale, corresponds with what is known of the scaling of iron at high temperatures. On making these further analyses, I shall be pleased to send you the results.

"It is interesting to notice that the copper objects all contain arsenic which is also found in the early objects from Ur. On the other hand, in this respect they differ entirely from the specimens found by Mr. Starkey at Tell Duweir, which never contain more than a trace of arsenic. An ore and slag obtained from the neighbourhood of Akaba also proved to be of very pure copper free from arsenic." (Cecil H. Desch.)

"Examination of Fragments received from Excavations at Tell el Ajjūl. (1) Stud covers. Electrum. With a small quantity of copper. (2) Pale gold foil. Containing less silver than (1) and only a trace of copper. (3) Yellow gold foil. A high proportion of silver, and no copper. (4) Silver, melted. This is almost entirely converted into horn silver (silver chloride). It contains a little copper." (Cecil H. Desch, Nat. Phys. Lab., Teddington. May 14 1938.)

CHAPTER IX

BONE AND IVORY. PL. XVIII

42. INLAYS, ENGRAVED. The inlaying of engraved slips of bone, set in wood, was especially a Hyksos art. Pieces of bone thus inlaid have been found each year at the same range of levels as in pl. XVIII (compare A.G. I, xxii, xxiii). The pairs of birds, facing, are a usual motive in this style of work. Falcon and pelican are among those suggested.

Pl. XVIII. Bone inlay. No. 1, tomb 2120, at 767 level. This group is dated by a dagger (pl. XI, No. 1) and pottery of the XVth dynasty. A scarab (pl. X, No. 129) is engraved with the beetle between scrolls.

No. 1 A, tomb 2129, at 891 level, and No. 2, tomb 2131, at 887 level, are of similar work.

No. 3. Another fine group is 2139, at 817 level. One alabaster vase (pl. XIX, No. 6) is like the style of dyn. XII, but the scarabs are poor, and half a dozen small ones of hard stone are undatable.

43. IVORY WORK AND SHELL. Nos. 4-12 and 25-27 present a difficulty, but they seem to be buttons or spindle-whorls. All of them have the base quite flat, applicable to buttons or whorls. No. 11 was with the finest jar of North Syrian form (31 V 6'); another like it was found in A J at 912 level. Two similar to No. 12 were found, one of polished ivory, in sq. 1/2, at 874 level, and one of steatite, in H J at 858 level. Most of these objects occurred separately in the town ruins.

Several more are made of steatite which, being heavier than bone, would suggest that they are indeed spindle-whorls. Very few of them have been found with burials.

Nos. 13, 14. Ivory playing-pieces for a game.

No. 15. Half of the ball of a femur, pierced for a spindle-whorl.

Nos. 16, 17. Ivory knobs with square socket in base. The holes round the base of No. 17 cannot be explained.

Nos. 18, 19. Toggles of ivory, probably for dress.

Nos. 20, 21. Piercers for leather; No. 20, ivory, No. 21, bone.

No. 22. Plate of bone.

No. 23. Ivory layers, in the handle of a dagger.

No. 24. Part of a lid, of bone.

Nos. 25-27, see Nos. 4-12 above. A duplicate of No. 25 was found in J/B at 928 level.

No. 28. Bone notched as a saw.

Nos. 29, 30. Ivory plates.

No. 31. Ring of shell nacre.

No. 32. Pierced shell pendant, with lines of drilled holes, forehead pendant (?).

No. 33. Cowrie shell.

No. 34. Part of antler of deer, *cervus dama* (?). It was in three fragments, found in F/N at 905 level, 2/3 at 811 level, and G/C at 861 level.

CHAPTER X

WEIGHTS AND STONE WORK

44. STONE WEIGHTS. The weights excavated this season resemble those usually found here, as they were for the most part small, averaging half an ounce. About fifty of them were of haematite,

beautifully shaped and polished. The remainder were of limestone (9), grey quartz (7), sandstone (3), and one each of dolerite, schist, serpentine, alabaster.

With these may be compared the stone weights in *A.G.* I, 10, li; *A.G.* II, lviii; *A.G.* III, liv; *A.G.* IV, pp. 13, 14, xxiii, lvii.

Where the form of a weight is unsymmetrical, two views of it are given (pl. XXII).

Ten unlevelled weights, lacking position, are placed at the head of pl. XXIV which contains the glazed and pottery objects.

45. HAEMATITE. The haematite weights, which form the finest class, were actually made on the spot. We found evidence of this when we recovered, the previous season, a rough block of the material from which the weights had been sawn (Palestine Museum). "The workmanship of the haematite weights is beautifully regular; some light on the skill appeared when, in a room, four weights were found and a block of haematite from which material had been sliced. The cut surfaces were flat and with polished faces, showing that a large flat blade was used, fed with fine emery. That the polish had not been added is seen where two cuts meet in a re-entering angle, both perfectly smooth, and the junction is sharp and clear without any over-cutting. It looks like an optician's work." *A.G.* IV, p. 14.

46. MARKINGS ON WEIGHTS. Some of the haematite weights are distinguished by markings on the base, and show lines cut in juxtaposition. Nos. 37 and 42, *peyem*, and No. 47, *beqa*, are marked with one line along the length of the base. These weigh $\frac{1}{2}$ and 1 and $\frac{1}{3}$ of their unit respectively. A similar line, crossed, is on No. 69, a half *qedet*. Nos. 68 and 70 have a single line traversing the width of the base, one *qedet* and a half *khoirinē*. One diagonal line is found on No. 62, one *necef*, and two diagonal lines parallel on No. 39, $\frac{1}{3}$ *peyem*. Two diagonal lines, crossed, occur on Nos. 13 and 48, one *qedet*, one *daric*. Three diagonal lines, two crossing, are seen on No. 63, one *stater*. No. 12 bears four parallel lines across the base, a quarter *khoirinē*. These twelve examples of marked weights are seen in numerical order in pls. XXII and XXIV, where the bases are figured below the profile views, and the marks copied.

The markings occur on the base of examples belonging to seven out of the eight standards. It does not seem that they indicate the standard nor are they confined to the unit of value or its appropriate multiple. Marks occur irrelevantly on six weights of 1 unit and three weights of $\frac{1}{2}$ unit, the others being $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{3}$. It is probable, therefore, that

they were not cut with any definite system in view, but were merely distinguishing marks added by the owner, the local trader.

47. EIGHT UNITS OF WEIGHT. The weights are proportionately as follows:—*qedet* 26, *beqa* 9, *peyem* 4, *khoirinē* 20, *necef* 14, *daric* 7. The southern influence brings in 39 weights, and the northern neighbourhood supplies 41 weights. Although the city lay on the southern border, the emporium of Egyptian trade, yet the weights of the distant north were actually in a majority and outdid the southern. The *khoirinē* of Persia swelled the numbers. Thus the commerce was largely Asiatic, and from a distance.

This may be judged better from a comparison of all the weights found on the site over a period of five seasons. They stand as follows:—*qedet* 155, *beqa* 80, *peyem* 30, the northern standards total 265; *khoirinē* 69, *necef* 79, *daric* 54, the southern standards total 202; *stater* 25, *sela* 53. Total of weights, 545.

48. SMALL TRADING. The smallness of the amounts traded, probably as spices (see sect. 22), shows that this is a matter of individual purchase rather than large merchandise, and this implies a great amount of external intercourse and petty trade over a wide area of northern countries as well as Egypt and her dependencies.

A representative collection of these weights is now in the Science Museum at South Kensington.

49. STONE VASES. Pl. XIX. Nos. 1-3. The bag-shaped vases are like those of dyn. XII, and therefore early Hyksos (see *Funeral Furniture, and Stone and Metal Vases*, xxix, 605-609).

Nos. 4, 5, 7. These are variants of the above, not found in Egypt. No. 4 is of black limestone.

Nos. 6, 8. The rounded base is typical of dyn. XII (*Stone Vases*, xxix, 659).

Nos. 9-11. The bulging tubular form, with a wide lip, is not found in Egypt, except rarely in dyn. XII (*S.V.* xxix, 656-658).

The *kohl* pots began with cylindrical forms in Egypt and widened at the shoulder in dyns. VII-XI (*S.V.* 597, 600) like Nos. 12, 13 here.

Nos. 14, 15. The wide conical neck belongs to dyn. XII (*S.V.* 661). No. 14 is of haematite; No. 15 is of marble, with a *kohl*-stick of haematite. The wider foot of No. 15 continues until dyn. XVIII (*S.V.* 731-734).

Nos. 16-20 are lids of *kohl* pots; No. 16 is of steatite, and the remainder are of alabaster.

In the beginning of the XVIIIth dynasty, the *kohl* pot disappears and the *kohl* tube or horn, *keren habbuk*, takes its place.

Nos. 21-26. The handled vases are very rare in

Egypt (S.V. 558). The form was specially used for *khenem*, one of the seven sacred oils connected with burial. No. 26 is of black limestone.

Nos. 30-35. The plain tubular vases are usual in Palestine, but not in Egypt.

Nos. 28, 36 and 40 are of good forms which came into use, for the most part, before the XIIth dynasty in Egypt and did not long survive. These forms occur in dyn. VI in S.V. 579-582, in dyn. XI in S.V. 584-590, and in dyn. XII in S.V. 650-652.

Pl. XX, No. 41. Base of a vase with ex-centric circles on bottom, and section of same.

No. 42. Relief carving in limestone; the type is not familiar.

No. 43. Fish-shaped vase of alabaster (see sect. 62). Found in the first town. Upper Hyksos level; it belongs to the end of the Early Hyksos age, and is earlier in date than the alabaster fish vase in A.G. IV, xxxix, 86, which belongs shortly before XVIIIth dynasty.

No. 44. Fragment of alabaster dish, with grooves.

No. 45. Piece of duck-shaped dish.

50. BASALT AND FURNITURE. No. 46. Basalt tripod of small size, incomplete, see A.G. IV, xl.

No. 47. Rough mortar of basalt.

Nos. 48, 49. Turn-table block, for modelling pottery, and section of same. Basalt.

No. 50. Upper block of larger turn-table. Basalt.

No. 51. *Kohl* pot of alabaster, brim missing, from the great square pit.

Nos. 52-56. Knobs of hard limestone, from pommels of dagger handles.

No. 57. Knob, unfinished.

No. 58. Knob from walking-stick.

Nos. 59-67. Spindle-whorls.

51. MACE-HEADS. Nos. 68-79. No. 70 is of hard black limestone, found with early Hyksos pottery. No. 76, unfinished. No. 79 is of black haematite, found alone in the second town, late Hyksos level.

52. PLAYING-PIECES AND TOOLS. Pl. XXI. No. 80. One of the usual forms of limestone dice, four-sided and tapering.

No. 81. Playing-piece of white quartz.

Nos. 82-91. Beads. No. 82, fluted; No. 83, black limestone; No. 84, chipped pendant; No. 85, green felspar; No. 86, turquoise; No. 87, crystal; No. 88, agate; No. 89, amethyst; No. 90, quartz; No. 91, limestone.

No. 92. Quartz burnisher.

No. 92A. Entire necklace found in a handful of earth. It is of green and black cylinder beads, alternating with round carnelian beads.

Nos. 93-99. These pendants may be plumb-bobs. No. 98, brown sandstone; No. 99, sandstone.

Nos. 100, 101. Drill caps, for use with bow drills.

No. 102. Trachyte pounder.

No. 103. Half of hone or whetstone, with section.

No. 104. Stone axe.

Nos. 105, 106. Haematite burnishers.

No. 107. Sandstone grinder for red paint.

No. 108. Basalt mortar for red paint.

No. 109. Sandstone disk.

Nos. 110, 111. Dolerite axes.

No. 112. Limestone plummet.

Nos. 113-115. Flint tools, date unknown.

Nos. 116, 117. Flint drills.

Nos. 118, 119. Flint arrow heads.

No. 120. Limestone lamp.

No. 121. Sickle flints with plaster fitting.

No. 122. Long-flaked flint.

CHAPTER XI

POTTERY AND PAINTED WARE

53. GLAZE AND SMALL OBJECTS. Pl. XXIV. No. 1. Small pot of dark blue glazed ware, at CC 873, and similar fragments at CC 808 and 897, all in first town, of early Hyksos date.

Nos. 2-4. Glazed vases, all of first town.

No. 5. Glazed hippopotamus, probably Egyptian; second town.

Nos. 6, 7. Rough hatched pottery, early (see A.G. III, xl).

Nos. 8-11. Melon beads, grooved. No. 11, frit.

Nos. 12, 13. Rough pottery.

Nos. 14, 15. Milled beads.

Nos. 16, 17. Wheels of toy chariots.

Nos. 18, 19. Plummets.

Nos. 20, 21. Reels for thread.

No. 22. Belt toggle.

No. 23. Conical stopper for vase.

No. 24. Notched pendant.

No. 25. Cap or stopper of baked clay, for shouldered vase, hollow to fit on neck.

Nos. 26-29. Playing pieces of ground pottery.

Nos. 30-32 and 39-41 are sherds ground into shape. No. 30 is a pottery lid for a jar stopper.

No. 35. Large bi-convex bead.

Nos. 36, 37. Spindle-whorls. Pottery whorls are uncommon.

No. 38. Sling bullet. Nos. 39-41, uncertain. Nos. 39, 40, potsherds ground circular, possibly for

twirling when strung. No. 41, potsherd ground oval, probably for a scraper.

54. JUGS AND JARS. Pl. XXV. These are mostly variations on usual types of dishes, bowls and jugs. The only notable additions to the known varieties of pottery are the three fine cylindrical jars Nos. 29, 31, 32, thick and heavy (type 31 v). These resemble the forms found at Qatna and are therefore probably from north-west Syria. They are of a type unknown in Palestine until found at Gaza (*A.G.* I, II, III).

Pl. XXVI. Nos. 35-38. Jugs with the usual neck handle. Those of type 38 B sometimes have the hip or shoulder handle, intended for tilting a water jar to get it empty. On the shoulder of the jar placed next to these, at the side of the handle, there is a vertical band of a common plaited pattern. The remarkable pot No. 38 H 2' (middle bottom row in plate) has, at the base of the handle, a stamp in relief bearing four signs, as shown below it in the drawing. These signs most resemble in character the late square Hebrew, but they cannot be Hebrew as the vase is of the early Hyksos age, before the time of Abraham. They must belong to an alphabet hitherto unknown in Palestine.

Pl. XXVII. Jugs and jars, continued. No. 57 H 9 is a good example of the painted pottery of the first town. The pattern is copied from network, with a star and a cross added on opposite sides. The sherd next to it is of black ware of pricked pattern, seldom dated. This example is probably of dyn. XII.

Pl. XXVIII. In the second row is a strainer for beer or wine; this is rare, but two were found. Below is a saucer which covered a jar, next to a spouted jug. The form with a spout is notable. The shape is copied from a leather bottle with a reed neck. The wavy pattern below the handle may indicate the stitching of the leather.

55. POTTERY WITH RELIEFS. No. 1 shows the painted pattern on neck and shoulder of a jar. Nos. 2, 3. Miniature forms.

No. 4. Cuboid block of pottery, with spikes on the sides and corners.

No. 5. Animal spout of vase, bull's head (?).

No. 6. Conical tube, with side opening.

No. 7. Modelled head, much defaced.

Nos. 8, 9, 10. Fragments of vases. No. 8, rough piece of figure vase, human.

No. 9. Animal head. No. 10. Raised pattern on shoulder-handle of jar; it is probably copied from handle riveted on a metal vase.

Nos. 11, 12. A dish of type 23 E 4. No. 11 represents the pattern of radiate petals incised on

the outside, seen from the base; and No. 12 shows rosette incised in the bottom, the section of the dish or bowl being placed below.

No. 13. Spiral pattern modelled in relief, on pottery handle.

No. 14. Fragment of animal foot, five toes, with side view.

No. 15. Hollow leg of a stand, in hard white pottery, with base view of foot.

No. 4 and Nos. 10-15 are new to us, unknown before.

56. PAINTED VASES. Pl. XXIX. The designs and patterns of this painted pottery are already familiar in each of the previous volumes. For the dating and ranges of the various patterns, see the tabulated statement in *A.G.* II, xlii.

Fragments of the painted pottery imported to ancient Gaza have again been found, as in every season of work here. There was lately a proposal to regard all of these as the product of one painter and his school. This theory is untenable in view of their positions. The levels at which they were buried ranged over several centuries. Such designs are, therefore, the product of some region which continued its exportation to this centre over a long period.

No. 16. A large bird with curved beak (see *A.G.* IV, xlv, 14A). This sherd was found with a brown bowl with raised lines, 19 N 3, xvii. The bird recurs on No. 17.

No. 21 is a fragment picked up on the surface. Other fragments from the same vase (figured in *A.G.* IV, xlvi, figs. 34, 35) were found in superficial ground last season. Both pieces show profile heads, apparently of charioteers driving. They are Late Mykenaeen in date, and of a later style than the rest of the painted ware found here; there is more than a thousand years between them.

Nos. 24-42. Geometrical patterns, mostly line (see *A.G.* III, xlv).

57. ANATOLIAN WARE. Pl. XXX. Nos. 43-49. Varieties of the Anatolian style (see *A.G.* II, xxxvii). The range of the so-called milk bowl is a very long one, and shows a remarkable separation of style at half way, as I noticed at Gaza from the series of 300 levelled examples (*A.G.* II, chapter ix, sect. 49) which were collected for examination.

The Anatolian bowl is seen in its early stage in the period of Palace I at Gaza, the Canaanite palace with stone foundation-course, dating before dyn. XII. The patterns began with delicate drawing in thin red line. This changed to black line, still finely drawn, and in Hyksos times this decoration was

superseded by very rough black bands on much thicker ware. The little divided squares in red (pl. XXX, Nos. 44, 45) go back to the Old Kingdom of Egypt; the fine lines of black (Nos. 43, 49) belong to dyn. XII, and this style gave place to sudden degradation when the Cypriotes copied the delicate ware in a coarser make.

[The more important of the antiquities described in chapters III, IV, VI, VIII-XI, and figured in pls. VI, VII, IX-XXII, XXIV-XXX, were retained by the Palestine Museum. The remainder were dispatched with me by troop-ship.

They were for the most part placed with previous finds from Gaza in the Institute of Archaeology (Lond. Univ.), Regent's Park.

Representative series went to the Ashmolean Museum, Oxford, and Sydney University.

The goldwork was sent over later on and, in return for special grants, the pieces were apportioned to the British Museum (29), Ashmolean Museum (20), and Fitzwilliam Museum (11), and a group to Sydney University.—H. P.]

CHAPTER XII

FAUNA OF VASE PAINTINGS

HILDA F. PETRIE

58. SOURCES OF FOREIGN WARE. As we have not done justice to the paintings on the vases of foreign importation found scattered in fragments in the ruins of ancient Gaza, it seems a fitting opportunity to review them and trace the various fauna represented on them. The ancient people on some seaboard north of Palestine appear to have had a great facility in catching the special character of many of the birds and fish which they delineated, and depicted them with much skill and in rapid flowing lines. From their easy brushwork, anyone with an ordinary knowledge of birds, for instance, can name some of them at a first glance.

In order to list them I consulted Professor Aharoni, of the Hebrew University, Jerusalem, and I am also indebted to the late Dr. Clarence Fisher who allowed me to quote other attributions made by Professor F. S. Bodenheimer of the same University. These are marked (A) and (B) respectively.

Identifications seem difficult to establish, but it appears that the fish are Mediterranean fish, and that the birds are mostly of maritime genera. This bears out the conclusion already reached, that we see here an importation from the N.E. coasts of the Mediterranean. Cilicia and its borders would seem to be the source of this painted ware. The date palm is depicted on one of the vases, so they do not belong probably to a country beyond the habitat of this tree.

They range from about 2500 down to about 1500 B.C. so may be said to be of the inherited style of their country, rather than to belong to one school of vase painting. Still less can their style be attributed to any one painter or group of painters.

59. BIRDS AND FISHES, A.G. V. The examples in the present volume are very few, named by Professor Aharoni. Pl. XXIX, 16, 17. Flamingo, *Phoenicopterus antiquorum*. This long-legged bird is seen in a crouching position. Pl. XXIX, 18. The fish is a species of tunny, *Labrus*. No. 19. Another species of tunny, *Pelamys*.

The majority of attributions refer to the vase paintings figured in the previous volumes.

60. BIRDS AND FISHES, A.G. I. Pl. xxviii, 4. The rotund bird, with an eight-pointed star on its flank, is the sea eagle, white-tailed, *Haliaetus albicila*. No. 5 shows a black pigeon (A, B) with a small raven (?) (A) approaching it, or perching on its back. Also a cormorant, *Phalacrocorax* (A) or a bulbul (B), alighted to prey on a fish, *Sphyraena* (A). The other side of the vase shows part of a crested bird, pheasant (A) or peacock (B). Also the hindquarters of a beast, said to be a hippopotamus.

Pl. xxxi (all A). No. 42. Bull. No. 41. Part of same (?) No. 43. The small long-necked bird is a duck, *Anas marmorata*. No. 44. Black-winged stilt, *Himantopus candidus*. No. 45. Plover. No. 46. Avocet, *Himantopus recurvirostra*. No. 47. Little bustard, *Otis tetrax*. No. 49. Tunny fish, *Thynnus*. Nos. 50, 51. Two species of tunny fish, *Scomber calias* and *Labrus*. No. 52. A Mediterranean genus, *Stromateus*.

61. BIRDS AND FISHES, A.G. II and III. A.G. II, pl. xxxviii. No. 1. Bull. Before XIIth dynasty. No. 2. Hindquarters of a bull. No. 3. Great bustard, *Otis tarda* (?) (A). Nos. 4, 6, 8. Ostrich, *Struthio* (A); No. 8 is late XVIth dynasty. No. 5. Black-winged stilt, *Himantopus* (A), or, from neck attitude, a stork (B). No. 7. Purple hen, or red-head gallinule, *Porphyrio poliocephalus* (A), or rock partridge (B). Before XIIth dynasty. No. 9.

Darter, *Anhinga rufa* (A). No. 10. Coot, *Fulica atra* (A). No. 11. Ibis *falcinellus* (A) *or* oyster-catcher by form, but stork by attitude (B). Early XIIIth dynasty. No. 13. Same bird (A).

Pl. xxxix, fishes. No. 15. *Sterna* (A). No. 18. *Trachinus* (A). No. 24. *Caranx* (A), *or* tunny fish (B). Pl. xl, 39. Young lamb (A).

A.G. III, pl. xli, 1. Rock partridge (B). From floor of Palace I, VIIth dynasty, fig. 2, swan, *Cygnus* (A), *or* stork (B). No. 5. Turkey (A) *or* flamingo (B). No. 6. Plover (A). No. 11. Crow *or* raven (B). No. 13. Fish, *Xyrichthys*. No. 15. Black-winged stilt (A). No. 16. Seagull, *Larus* (A).

Pl. xlii. No. 19. Goat (A). No. 20. Flamingo (A).

62. BIRDS AND FISHES, A.G. IV. Pl. xxxix, 86. Alabaster vase in form of fish, *Scarus Cletensis* (A). Dated to end of Early Hyksos (see sect. 49, 43 here, and pl. XX, 44).

Pl. xlii. No. 1. Tunny fish, *Pelamys* (A). Nos. 1, 2. Purple hen or redhead gallinule (A); *or* No. 1. Crow or raven. No. 2. Egyptian vulture (B).

Pl. xliii. No. 4. Spoonbill, *Platalea* (A), *or* curlew *or* a heron (B) fastening on a fish, *Stromateus* (A). An avocet (A) attacking a black-winged stilt (A), *or* a sandpiper *or* godwit, *or* possibly both herons (B). Late XVth dynasty. No. 6. Sharks. No. 7. Tunny fish, *Pelamys* (A). No. 8. Cormorant (A), alighted on a *Xyrichthys* fish (A) to peck its head.

Pl. xliv. No. 9. Three pigeons represented (A and B) from the six panellings on shoulder of a complete vase. Date XVIth dynasty (see *Sediment I*, xlv, 71). No. 11. Red-breasted merganser, *Mergus* (A), *or* crow *or* raven (B). No. 12. Sheldrake, *Todorna* (A). No. 13. Coot, *Fulica atra* (A). Nos. 14a and 14b. Crow *or* raven (B).

Pl. xlv. No. 15. Goose (A). No. 16. Avocet (A).

Altogether, four kinds of beast, twenty-nine kinds of bird and eleven kinds of fish are enumerated in the above list, which is not, however, complete.

The paintings were on broken scraps of pottery, and these potsherds represent but a small part of the entire vases. The complete scenes and figures would have given us many more examples of that northern fauna. From what country the vases were imported can only be ascertained by excavation in the lands immediately north of Palestine, when the civilisation to which they belong may be unearthed.

PART II

ANCIENT GAZA V

CHAPTER XIII

LOWER LEVELS OF EXCAVATION

ERNEST J. H. MACKAY

Levels of building and of objects, in the following two chapters and in the plans, are stated from an arbitrary zero 954 ins. above sea level.

In the registration of position, the first letter G denotes the region or district on the tell, the second letter the house or area, and the third letter the chamber or spot.

63. CONDITION OF THE SITE. Further excavations at Tell el Ajjūl were begun by the British School of Egyptian Archaeology on February 12 and terminated on April 14 1938. The area of ground selected for digging was immediately north-east of the portion of the tell excavated in the season 1933-1934 (*Ancient Gaza IV*, pls. lxii, lxiii).

Two separate occupations with their buildings were disclosed, but no great period of time would seem to have elapsed between. Pls. I, II and III, IV are the plans of these two occupations, and in pl. V four sections show the relative positions of their walls. These plans and sections were prepared by Mr. Carl Pape whom I wish to thank for his careful performance of this exacting task. Those who have excavated in Palestine will realise the difficulties that he experienced in planning buildings so ruined as to be ill-defined; the original faces of the walls were in many instances difficult to trace.

Before excavation was begun, the ground was divided into squares of 1000 ins. a side, shown by whole lines on the plans (pls. IV and XXXVI, 1, 4, 5), and for closer work these squares were subdivided into four parts of 500 ins. each way, which are marked on the plans in dotted lines. Our grid starts from a Government trigonometrical mark, shown at the bottom left-hand corner of pl. IV. It was high up on the inner side of the Great Bank (XXXVI, 2). The bank also appears in photographs 3 and 7. This post on which two numbers, DZ, 22 and 103/52, are painted was also used as my datum level. Unfortunately the Palestine Survey Department could not tell me the exact height of this point above sea level; nor could I correlate it with a bench-mark at another part of the mound, for the latter had been badly damaged in the riots of 1929. By estimation, however, we take the trigonometrical point DZ/22 to stand 954 ins. above

mean sea level, a reading that can hardly be 18 ins. out, either way.

In order that our plan can be linked up with any future plans that may be made at Tell el Ajjûl, we selected a second trigonometrical point in the field on the right of photograph 4 (XXXVI), well to the north of our present work. This second point bears the numbers DZ, 8 and 105/52, and the relationship between the Palestine Government's two points is shown in the diagram at the foot of pl. IV. Point DZ, 8, which is on a considerably higher part of the mound, is 183 ins. above DZ, 22. The hedge in photograph 4 is the limit of the stonework on plan LA, A.G. IV, pl. lxi. The tree is also in photographs 1, 5, 6.

The area that we excavated had been under the plough. It sloped steeply from north-west and south-west to a *wady* that drained this part of the mound (photographs 5, 6), and from the area closely adjacent to this wady we found that the remains of buildings had long ago been swept away by countless "early and latter" rains of autumn and spring.

The excavations were begun from the edges of this wady and carried fan-wise north and south-westward, scraping the mound bare to the rock which was soft sandstone with an infiltration of gypsum (7). Though, as we expected, no buildings were disclosed by our preliminary work, there was much of interest, for numerous round pits, ranging from $3\frac{1}{2}$ to 7 ft. in diameter and of varying depth, were unearthed. Most of these pits contained nothing whatever; a few had been used as graves. Interspaced with them, a number of shallow depressions had been cut in the soft rock and contained burials of later date. The surface of the rock here, and in other parts of the *tell*, was very irregular owing to the action of water. Small channels and ravines were met with everywhere, showing that the rainfall in the early history of the *tell* was as much as, if not more than, it is now.

64. STORAGE PITS. Before describing in detail the buildings that we cleared, a brief explanation is called for, concerning the numerous round, square, and rectangular pits that are shown scattered in the plan in pls. i, ii.

These pits, which were all cut into the soft marl-like rock, vary in the case of the round ones from 35 to 120 ins. in diam., and from 24 to as much as 72 ins. in depth. One of exceptional size (sq. 0\2, B; GBX) is 155 ins. in diam. and 120 ins. deep (XXXVI, 8, foreground, and 3). Square and rectangular pits were not quite so common, but some of them were of considerable size. A very large

pit marked in sq. 2\3, A, measured 207×105 ins. and 104 ins. deep, its floor being 180 ins. below datum.

That these pits existed before the walls that now surround them seems evident from the fact that several house-walls cover portions of them, as in rooms GCA, CD, DP (sq. 1\3) and GFP, EV (sq. 2\4). The positions of many more in relation to the walls around them also suggest that they are of earlier date.

There seems no doubt that these pits were used for the storage of grain and the like, though most of them contained nothing to indicate the purpose for which they were made. They would seem to have been cut by the invading Hyksos when they occupied and fortified the site in the early part of the Middle Bronze Age. As the early Hyksos were tent-dwellers, their principal food supplies had necessarily to be stored in pits, both in ordinary circumstances and in the event of a siege. When mud-brick houses were built in later days there was perhaps not so much use for these pits; in some instances they seem to have been filled in, though some appear still to have been used for the original purpose under more luxurious conditions.

On the rubbish that filled the large pit, 127 ins. in diam. and 38 ins. deep, marked in sq. 2\1, A, there stood a fragment of a brick wall, 22 ins. thick and 27 ins. high. The sun-dried bricks of this wall had become very closely compacted, but we managed to get one out whole and found it to measure $13\frac{1}{4} \times 6\frac{3}{4} \times 3\frac{1}{2}$ ins. In all probability this wall is part of a house which the rains have swept away.

At various points on this part of the *tell*, the surface of the rock had been levelled over fairly wide areas and probably at the time when the earlier buildings were being erected. No great labour would have been necessary as the rock was very soft.

65. BURIALS. Not all the pits that were found were used for storing commodities. The long oval depressions, numbered in the plan on pls. I, II, were graves which had been cut after the buildings had fallen into disuse. As a rule each contained one body, though multiple burials were found. Some of the already existing circular storage pits had been adapted to serve as graves, niches being cut in their sides to contain the dead. Three such niches in one of these pits seem to have been the rule, each containing one body, but burials were found where two bodies occupied the same niche. Unless the dead were placed in these pits at the same time, we must assume either that the pits were kept open or

just roofed over temporarily, perhaps with brush-wood. The position of some of the bodies suggests that the pits remained empty after the burial, as occasionally a limb was found to have hung down from the niche in which the body was laid. It will be noticed that three of the round pits in the plan, thus adapted for later burials, were away from the remains of houses (sqs. 0\3, D ; 2\3, A and D).

A very interesting grave was that of a horse (No. 2009, pl. i, sq. 2\3, B) ; it was unearthed just below the surface of the ground at the level — 118. As is seen in pl. XXXIX, 32, the skeleton was incomplete.

66. WELLS. The well marked in sq. 2\1, A, 60 ins. in diam., with its top at the level — 226 ins., was excavated to a depth of 135 ins., but as it had not been lined and threatened to cave in, we had to desist from clearing it further. What may have been another well was found at GGN in sq. 1\4, B ; it is described in the next chapter, which is on the later occupation. No other wells were found ; these two, if indeed the stone-lined pit at GGN should prove to be a well, would have sufficed for this comparatively small area.

67. BRICKS. The sizes of the bricks used by the people of the upper and lower occupations will be found in the text. In every instance they were of sun-dried mud with no binding material. The early bricks, a light grey colour, frequently contained large particles of lime or gypsum. Those used by the later people were made of a stiff loam of a warm russet-brown colour and the same hue as the loam in the fields around.

68. FURNACES. Several large furnaces in the south-western part of our excavations are indicated in sqs. 1\2, B, and 1\3, A and B. They were undoubtedly in use when the earlier buildings had fallen into decay, but for what purpose nothing found in or around them provides a clue.

69. EARLY OCCUPATION (pls. i, ii). Of the two separate occupations (pls. I-II and III-IV) of this portion of Tell el Ajjūl, the first and earlier one is dated, by the various objects from foreign sources found in the buildings, to a period soon after the XIIth dynasty (Middle Bronze I Age). In most instances the foundations of these mud-brick buildings rested on the rock. Some of the walls were of quite a substantial nature, especially those of what must have been a very important building, marked in sqs. 1\3, 1\4.

In the course of time these early buildings were deserted or, as we have already seen, used simply for house furnaces, and the site served as a cemetery. When the site was again occupied, only in a few

instances were the ruined earlier walls built upon or heightened. Indeed, quite a thick deposit of debris separates the buildings of the two levels thus marking a distinct, but not very prolonged, hiatus in the occupation of the *tell*. This debris is frequently mixed with ashes, which suggests that the close of the earlier period was attended by a certain amount of violence. There were slight traces here and there of a third occupation, which followed closely on the second, but owing to denudation the evidence was very slight and amounted to little more than the heightening and repairing of walls. It is possible that the stone drain and pit, GJP, shown in plan iii, sq. 1\4, B, belonged to this third occupation, which may perhaps be assigned to the Late Bronze II, or early part of the XVIIIth dynasty of Egypt.

70. GA AREA. At the foot of pl. ii there is a well-marked street GAL, GAN (XXXVII, XXXVIII). This averages 95 ins. in width and its walls, which rest on the rock as foundation, average 132 ins. high. Mud bricks projecting from near the base of this wall (GAM) at the level — 149 ins. were found to measure $22\frac{1}{2} \times 15 \times 5\frac{1}{4}$ ins. and were in a good state of preservation. Though we essayed to measure the bricks in the upper levels of the walls on either side of the street, damp had so compacted them together that it was impossible to separate them. The considerable thickening of the wall on the south-eastern side of the street to a width of 60 ins. was due, I think, to necessary repairs and the re-facing of the wall. This section of wall was used again in the second occupation ; it is therefore also shown in pls. III, IV.

At GAN in this street, an ovoid alabaster jar (No. 533, pl. xviii, 8) of XIIth dynasty shape was found at the level — 139 ins. and, close to it and at the same level, a broken obsidian vessel (No. 540), on which the outline of a cartouche and two hieroglyphic characters were incised. Another piece of the same jar (No. 541) bearing the top of a cartouche and a *nefer* sign was found at locus GAM. Both the alabaster and the obsidian jar appear to be Egyptian work of the XIIth dynasty and, as they were found close to the rock floor of the street, we can assume that both street and buildings at this level date from that period or slightly later. The alabaster jar was nearly perfect, but of the obsidian jar only two fragments were found, and it would seem to have been purposely smashed in a raid or some political disturbance in the city.

Room GAA on the south-eastern side of the street is roughly 130 ins. square, with a doorway

25 ins. wide in its south-eastern wall. Its street wall stood 99 ins. high, with its foundations on the rock. The bases of the other walls sloped up to the south-east and rested on the steep slope of the artificial rampart which encircles the *tell*. No doorway could be traced in room GAB, but its mud floor at the level -88 ins. was covered with gypsum plaster. This pavement had subsided but was very distinct. As it lay but a short distance below the top of the walls around it, it marks a later occupation of this room.

The small room S.E. of the curiously long narrow chamber GAC, AG (probably originally three rooms) also had a mud pavement covered with white stucco at the level -78 ins.; its walls also were washed with white. The remaining two rooms had no features of particular note save the thickness of their walls.

Room GAR on the opposite side of the street was evidently a bathroom (pl. II and XXXVII, 10, 11). It was entered from the larger room GAO by a doorway 31 ins. wide. Its mud-plastered floor, which was coated with white stucco, sloped somewhat abruptly to W.N.W. and was drained by a channel, $6\frac{1}{2}$ ins. deep, under the base of the S.W. wall. The pavement which had subsided severely in places had an average level of -114 ins., above which the white-plastered walls still stood some 30 ins. high. The doorway had been blocked with rubbish on which had been built a later wall spanning the doorway. This little place of ablution, which measured 92×55 ins., was very carefully built. On removing the stucco pavement, we uncovered a circular pit, 38 ins. in diam. and 91 ins. deep, which had probably served as a soak-pit, at the north-western end of the room.

There was little of interest except the graves in the remaining ruins on this side of the street, which appear to have belonged to a single house. Room GAO was very ruinous, and an irregular pit (shown by a thin line in the plan), which had been cut in it at a later date, seems to have been a furnace, for its sides were roughly plastered with mud. Here was found a rectangular bar of pottery (No. 814) with roughly rounded edges, one end of which suggests that it had been attached to the wall of the furnace. This pottery bar showed traces of secondary burning, and the sides of the pit were vitrified in places.

Room GAS was difficult to understand, as considerable alterations had been made (pl. II and XXXVII, photographs 9, 12). The doorway leading into room GAO was 36 ins. wide, with well-defined

jambs just under 12 ins. high. Bricks taken from this wall averaged $8\frac{1}{4} \times 8\frac{1}{4} \times 5\frac{1}{4}$ ins. in size.

71. GB AREA. Room GBA further along the street, beyond two or three very dilapidated rooms, was in a much better state of preservation. It measured about 203×128 ins., and was divided by a thick partition wall in which was a doorway 54 ins. wide. Its substantial walls averaged 43 ins. high and rested on the rock at an average level of -124 ins. It was possibly a two-roomed shop. GBB, BC was another well-built double apartment with a doorway, 24 ins. wide, in its partition wall. No doorways leading into other rooms or to the outside could be traced but, as a furnace was made in room GBC at a later date, it may be that all doorways other than the two shown had been filled in.

The number of burials in room GBE was remarkable, all being of later date, and laid in rough cavities in the rock floor. A roughly laid pavement of 2 ins. of mud, covered by a layer of white plaster $\frac{1}{2}$ in. thick, lay at the level -97 ins., i.e. 12 ins. above the rock, which was fairly level at this point. A large pit of earlier date, 30 ins. deep, cut in the rock in room GBF, was so centrally situated as to suggest that it was re-used by the occupants of this room (pl. V, sect. 7-8). The large apartment GBO, BU, BV had been greatly ruined and its south-eastern end is only a conjectural restoration. Additions to, and the re-facing of, its north-eastern wall which averaged over 72 ins. high caused much uncertainty as to its plan (pl. V, sect. 7-8).

GBI, BJ, BQ may have been a courtyard, but no entrance to it from the street could be found. In it were a number of burials and one large circular storage pit. GBW was also a very complicated room; its south-western wall was composed simply of rammed mud.

GBX is of special interest as providing proof that some of the storage pits, so common at Tell el Ajjūl, were in actual use by the people who built these early houses. A pit of unusually large dimensions had been incorporated in the S.E. wall of the room, throwing it out of true alignment (pl. V, sect. 5-6; xxxvii-xxxviii, photographs 3, 8, 12).

72. GC AREA. GCA-GCD form a compact group of rooms bounded on S.W. by what seems to be a street (GBH). Possibly this street turned the corner to GBD, but the opening was subsequently blocked up. Bricks extracted from the base of the N.W. wall of room GCD, which stood about 54 ins. high, measured $14 \times 14 \times 4$ ins. The pits cut in the rock in rooms GCA and CD are clearly of earlier date, for the walls rest partially over them on the

rubbish fillings. A round pottery oven in the western corner of GCA was 22 ins. in diam. and stood 18 ins. high, with its base at the level -104 ins. Similar ovens, cylindrical in shape but with the upper portions missing, have been found in various parts of the site, both in the upper and lower occupations. They seem to have been built in position, unbaked, their inner surfaces being gradually hardened by constant use.

Room GCE, which unites this block of rooms with a larger building to the north-west, contained a large furnace, constructed when the room was no longer inhabited and therefore of later date than the walls that still enclose it. This furnace was an oval pit, estimated as some 150×70 ins., cut in the debris that filled the room and roughly lined with mud bricks ($15\frac{3}{4} \times 13 \times 3\frac{1}{2}$ ins.) set on edge. The lining shows definite signs of burning. At the base of this pit, at the level -145 ins., was a flue of irregular shape, averaging 24 ins. deep and terminating at the north-eastern end in a subsidiary pit which was found to be filled with ashes and soot. Nothing in, or near, this kiln gave any indication as to the purpose for which it was used.

In this part of the site (sq. 1\3, C, D) considerable use had been made of rammed mud or pisé in place of mud brick. Naturally walls of such a material as this lack the clear faces that we find with mud brick, and in some instances it was difficult to find a line at all.

The absence of buildings in sq. 0\3, D, is due to weathering. A small *wady* running N. to S. and another N.E. to S.W. have cleared away practically all traces of building, leaving only rock-cut storage pits of which there are an unusual number here. A very large pit at locus GBR was originally surrounded by a mud-brick wall, 14 ins. thick, to increase its capacity. Bricks taken from the wall S.E. of GBC measured $15\frac{3}{4} \times 15\frac{3}{4} \times 3\frac{1}{2}$ ins.

The buildings in sqs. 0\3, B, and 1\3, D, were so much dilapidated that it was difficult to find anywhere the actual face of a wall. The thick wall north-west of the large courtyard GCP, EM, EN was better preserved. The doorway at GCP was 44 ins. wide and its jambs still stood a little over 48 ins. high, on a rock foundation 73 ins. below datum. Another and wider entrance to the court at GEN was 67 ins. in width, with its sill at the level -31 ins. The third doorway north-east of GEF was exceptionally well defined. It was 44 ins. wide and its jambs, some 48 ins. high, still retained much of the thick white stucco that originally covered them. Here the rock was 70 ins. below datum.

E

One of a group of four jars (No. 960) found in this court, possibly once belonging to a burial, can be dated to Middle Bronze Age II. It lay 26 ins. below datum, well above the foundations of the walls which date from Middle Bronze Age I.

A very interesting collection of weights (group 1115) was found in the long narrow chamber (370×103 ins.) GCM. These weights, which probably belonged to a trader, are figured in pl. XXII, Nos. 25-35. Some of them were natural pebbles of irregular shape, others were barrel-shaped, and two were fitted with bronze rings. They lay about 89 ins. below datum.

GREAT PIT. In sqs. 1\3, 2\3, 1\4, 2\4, some very massive construction is shown. Several of the walls, being as much as 77 ins. thick, were clearly the remains of an exceptionally important building. This building, it will be seen, encloses a very large rock-cut pit of an average depth of 204 ins. which is shown being excavated in photograph 13 (XXXVII). Though it was not very accurately shaped, the sides of this pit are fairly smooth, and evidently great care had been taken in its making. Its average size at the top is 390 ins. N.E. to S.W. by 360 ins. N.W. to S.E. As will be seen in sects. 1-2 and 3-4, in pl. V, the sides sloped outwards from the floor, which was fairly flat, and dipped towards the eastern corner.

We hoped to find a tunnel somewhere at the base of this pit, leading to the outside of the *tell* or to a supply of water, but though all its sides were cleared, and its floor which was 268 to 285 ins. below datum level, nothing was found to give a clue to its use. At first it looked as if it might have been intended for storing water, but there were no signs anywhere of plastering and the rock itself is very porous. There was, moreover, no lack of water for the inhabitants of the *tell*, as the wells testify. Water is procurable at depths of 30 to 40 ft., and it seems unlikely, therefore, that this great pit is an unfinished water reservoir. An alternative suggestion that it was a gigantic store-room does not seem feasible, if we consider the difficulty of properly roofing it to keep it dry. Several infant burials in large jars were found in niches cut in the N.W. and S.E. sides of this pit, about three-quarters of the way down. These can be assigned to the period between the desertion of the earlier buildings and the later occupation of the mound. The pit can have been only partially filled with debris when the burials took place.

73. GG AREA. In the thick-walled rooms to the south-west of the great pit, which are seen partially excavated in photograph 14, several interesting

features were apparent. Room GGD, 203×144 ins. in size, had a blocked-up doorway, 50 ins. wide, in its south-western wall. A rock-cut pit in the eastern corner was 12 ins. deep. Several cavities in the floor probably once held large pottery jars. Room GER, besides communicating with room GGD, had an outside entrance, which was also found blocked up. This doorway, which was the same size as the other, had well-preserved jambs still standing some 70 ins. high. In this room, a footing 8 ins. wide, along the south-eastern wall, marks the junction of the earlier mud-brick wall and a later one of rammed mud (pls. III, IV). The walls of this room were sharply defined and retained in places the white gypsum plaster with which they were formerly coated. At the south-eastern end of the room was a row of three circular cavities in the floor, carefully lined with mud and then whitened, like those in room GGD, and evidently intended to hold water or storage jars. The level of the mud floor which was laid directly on the rock was -70 ins. The earlier walls rose to an average height of 63 ins., on which the rammed mud walls, already referred to, rose another 26 ins. (average).

74. GE AREA. In room GEA an oven, 59 ins. in diam., rested on the mud-covered rock floor. It was a plain cylinder of clay, now only standing 12 ins. high, and partially baked inside by the use to which it had been put. The partition wall that separated this room into two was only 15 ins. high; nor was it bonded with the thick wall against which it abuts.

Projecting from the eastern corner of room GDY was a circular shelf of stone 3 ins. thick and 22 ins. in diam. and roughly pick-dressed. The plastered floor of this room was at the level -64 ins. Room GDL would have communicated with the top of the great pit if the aperture, only 15 ins. wide, could have been used as a doorway. A line of stones one course high, in this room, at the level -45 ins. was probably a later addition.

The massive wall, 46 ins. thick, that bounds the south-eastern side of the pit, averaged 30 ins. high, and its foundations rested as usual on the rock which here averaged 60 ins. below datum.

The rooms on the north-eastern side of the pit were nothing like so substantial as those on the opposite side. Room GFE was a large well-built chamber, 238×150 ins., with a large irregular pit in its centre, 122 ins. deep. Here the walls stood only 17 ins. high and all the doorways had disappeared. In the long passage GFF, which was only 30 ins. wide, there were found the remains of

two circular ovens standing 17 ins. above a mud floor at the level -54 ins.

75. GF AREA. An exceptionally well-preserved floor at the level -58 ins. in room GFC had been made by pouring liquid mud over the rock floor; it was about 5 ins. thick. The walls of this room stood in places only 23 ins. high (photographs 15, 16). A doorway in the south-west corner was 49 ins. wide, with jambs standing from 14 to 33 ins. high. A large dish containing bones of a sheep, or goat, lay under the western corner of the room and may have been a foundation deposit.

The structures on the south and south-eastern sides of the great pit are evidently another wing of the large building on the south-western side. Some of the walls were most difficult to trace, principally those of rooms GEL, DS. At the south-eastern end of room GDG was a wall abutting against an older one to the south-east and forming a platform, 20 ins. wide and 30 ins. high, which seems to have been an attempt to strengthen the wall standing, at this point, 34 ins. above it. The very narrow passageway, only 14 ins. wide, between rooms GDJ and DK can hardly have been much used. Possibly these two rooms were intended for storage.

In room GDH, which was 133×76 ins., a large handled jar was found (No. 269A) which can be more nearly dated to the end of the Middle Bronze Age. This jar lay 78 ins. below datum, together with a small juglet, and they may both have belonged to a grave.

At GDV there seems to have been a courtyard, 285×190 ins. (average). In the centre of this court was a large storage pit, 105 ins. in diam. and about 48 ins. deep, which at a later period had been converted into a burial place, the dead being laid in three niches cut in its sides. Here the surface of the rock averaged 68 ins. below datum, and the ruined walls around averaged 28 ins. high. Bricks from the S.W. wall of this court measured $16 \times 16\frac{1}{4} \times 6\frac{3}{4}$ ins.

A wide street separated the large building containing the great pit from a less important building to the north-east. This street, which averaged 88 ins. wide, preserved its entity into the second occupation (pl. I). The walls on either side of it were not so well preserved and averaged only 23 ins. high.

The building, of which rooms GFP and FV were the best preserved, appears to have been of little importance. Two round storage pits of earlier date had been filled in, before it was built with its walls above part of them. An oven, built partly into the

south-western wall of what was probably a courtyard (GFV), was shaped as a very thick-walled cylinder of mud, 26 ins. in diam. Like all such ovens, it had been weathered down to a height of only 14 ins. The mud pavement on which it stood was 52 ins. below datum.

Inside the badly ruined room north-west of locus GFX, a group of nine flint flakes was found on the mud floor, 48 ins. below datum. These flakes evidently belonged to a sickle, and on each there were still traces of the white gypsum cement with which they had been fastened, end to end, into a wooden handle. The thickness of the now isolated walls further north-west marks the former presence of an important building. The surface of the rock here averaged 31 ins. below datum, and the walls which rest on it still stood an average height of 30 ins.

CHAPTER XIV

UPPER LEVELS OF EXCAVATION

ERNEST J. H. MACKAY

76. LATER OCCUPATION (pls. iii, iv, v). The upper occupation of the part of the *tell* that was excavated can be attributed to Late Bronze I. A small number of tombs containing Middle Bronze II pottery were found beneath some of the house walls, in such positions that they could not have been later intrusions (tombs 2043, 2084, 2093, 2097, 2108, 2130; pottery groups 661, 698).

At the foot of the plan it will be seen that the street GAM, GAN (XXXVIII, 17) remained in use. The thick mud wall along its south-eastern side, which was in this occupation only some 34 ins. high, had been built upon, and in alignment with, the earlier wall seen in pl. ii. The buildings on the other side of the street, however, are shown by sect. 5-6 in pl. v to bear no relation to the earlier walling below them; indeed, a considerable amount of debris separated the two occupations. This street was also narrower in places than in the earlier period, being only 67 ins. wide between GAM and GAN.

77. GA AREA. A second street (GAR, BV, BT) at right angles to it and running W.N.W. did not exist in the previous occupation. It averages 87 ins. wide, with the walls on either side from 20 to 41 ins. high. Bricks extracted from the broken wall at GAP were $14\frac{1}{2} \times 14\frac{1}{2} \times 4\frac{1}{2}$ ins. in size. The buildings on either side of this street form three groups which will be described separately.

Room GAO is seen in pl. XXXIX, 29 in the course of excavation. This room, which is 213×98 ins. (average), communicated with its neighbour GAE by a doorway, 56 ins. wide, whose jambs stood only 34 ins. high. We were able to measure some of the bricks from its walls and they averaged $14\frac{1}{2} \times 14\frac{1}{2} \times 3\frac{1}{2}$ ins. in size. Another doorway 50 ins. wide, in the north-western wall of room GAF, was not so well preserved. Just beneath the north-eastern wall of the badly damaged room GBW was a grave (No. 2097) at the level -59 ins. which belonged to the same period as the majority of the early graves.

Judging from the thickness of its walls (35 ins.), the building further to the north-west must have been of considerable importance. The southern walls of room GBW were badly damaged. Here, at the level -49 ins., the remains of a rough pavement of large water-worn pebbles, part of which had been removed anciently (XXXVIII, 18, 19), sloped from E.N.E. to W.S.W. with a difference of 7 ins. in level. This was probably a bathroom, from which the water escaped through a channel in the now missing southern corner. The bronze knife (No. 480) illustrated in pl. xiii, 49, was found in this room at the level -30 ins.

78. GB AREA. There was little of interest in room GBX. Room GBY was only noteworthy for the exceptionally well-preserved bricks in its north-eastern wall; these measured $14\frac{1}{2} \times 14\frac{1}{2} \times 3\frac{1}{2}$ ins., the same size, it will be noticed, as in room GAO.

To the north-west of this house were the remains of thick walls built of pisé or rammed mud. In the angle GHC were the remains of another pebble pavement at the level -20 ins., some 4 ins. below the bases of the walls which stood from 5 to 11 ins. high. This also was probably an ablution place.

In the obviously important building on the north-eastern side of the street, the rooms were all curiously irregular in shape. Evidently a great deal of alteration and rebuilding had taken place, though it was hard to detect owing to the compacted state of the mud-brick walls. Here again no doorway could be traced, the walls being denuded down to an average height of 23 ins. (pl. v, sect. 7-8). Further north-west the walls were even less definite in outline and are in consequence more or less conjectural on the plan.

79. GH AREA. Still further north-west, only the long wall GHF, HJ, from 13 to 32 ins. high, remains of a building that has almost entirely disappeared, leaving only scattered fragments of pisé. At some little distance to the north-east of this

wall, no less than 120 knuckle-bones (No. 1081) of sheep or goat, perhaps kept for sale, were piled together in the only remaining corner of room GDS. In the centre of room GEL, a little manger (XXXVIII, 20), 25 ins. in diam. and 8 ins. high, was constructed of flat pebbles set on edge in a ring; it was paved inside with the same material, and its level was -7 ins. At GCP, nearer to the long wall, a well-preserved horse's bit in bronze (No. 986) was found at the level -32 ins. just below the surface of the ground.

80. GD HOARD OF GOLDWORK. An important hoard of silver and gold was unearthed (pl. iii, sq. 1\3, B) close to the remains of room GDS. The objects found are numbered as group 277, and illustrated in pls. VI and VII. This hoard was some 21 ins. below the surface of the ground, at the level -33 ins., and appears to have been waste material buried by a jeweller for safety; his house has been entirely washed away. It would not have been long before the rains or the plough revealed this treasure to some peasant working the land, and its fate would probably have been the melting-pot. There was no trace of a box or other receptacle, though there were definite indications that the scrap metal had been wrapped in linen cloth in separate little parcels before being buried beneath a floor. Certain gold pendants in this hoard bear the embossed figure of a goddess and resemble pendants found at Ras Shamra in Syria, where they are dated to the Late Bronze II period. At Megiddo, similar ornaments have been assigned to the MB-LB era.

81. GE AREA. The very large building GER, EA, &c., was constructed entirely of pisé. On comparing plans, on pls. I and III, it will be seen that this building was actually begun in the early period and re-used later by restoring and heightening its walls. Unfortunately, the later walls are not sufficiently preserved for any doorways to have survived, save one between rooms GER and GD, which had been blocked up; this door was the same width (52 ins.) as a door in exactly the same place in the earlier occupation (pl. I). The walls on either side stood about 29 ins. high. Room GER was 153 × 133 ins. and a little longer and wider than the earlier room below. As I have stated before, a narrow footing along the south-eastern side of this room marks the junction between the brickwork of the two occupations.

82. GG AREA. Room GGD (pl. iii) was very much the same size (200 × 123 ins.) as the room below, before the alteration of the latter. A layer of ashes and soot-like material, about 12 ins. thick,

was found on the mud floor of this room at the level -6 ins. A recess, 109 ins. long by 28½ ins. deep, in the north-western wall at the level -36 ins., was ornamented with small bivalve shells stuck closely together in white plaster (XXXVIII, photograph 21). Eighteen inches above this recess was a small niche, 30 ins. wide and 28 ins. deep, whose sides were also plastered with gypsum. We may perhaps regard this chamber as a shrine, the shelf to hold the offerings and the niche higher up to receive a sacred image. Possibly also there were a number of wooden objects in this chamber which, together with the burning of its roof, would account for the thick deposit of ashes on its floor.

To the north-west of this shrine (sq. 1\4, B), we came upon several interesting features. Room GGJ, JP, which had lost two of its mud-brick walls, was obviously part of a house of later date than the pisé walls to the north-east and south-east of it. The end of its south-western wall, it may be noticed in the plan, overlies these walls. Probably the later mud-brick house can be ascribed to Late Bronze II or the early part of the XVIIIth dynasty.

A stone-lined pit in the centre of room GGJ, JP, 41½ × 43 ins. and 32 ins. deep, with walls 14-16 ins. thick, though by no means squarely built, was carefully constructed of irregular blocks of soft sandstone set in mud mortar (XXXVIII, photograph 22). The bottom of this little pit was paved with mud at the level -34 ins. North-east of it, a roughly built stone drain, whose channel averaged 14 ins. wide by 11 ins. deep, had subsided in places (photograph 23). It originally sloped to the W.N.W., where its level was -24 ins., but its highest part is now in the middle of its course, and 9 ins. below datum. The proximity of this drain to the stone-lined pit suggests that the latter was either a cistern or cesspit. A very efficient pottery drain-pipe (No. 1050) was found at the level -7 ins. in GJK, but not in position.

A little to the north-west was another stone-lined pit, elliptical in shape, which measured 50 × 34 ins. inside. The top of this pit had been broken away and is now at the level +28 ins. Unfortunately we had to cease work at this point and we did not ascertain the depth of the pit; but as its sides went down for more than 36 ins., too deep for a cesspit, it was most probably a well.

The pisé wall that appeared to shut off this possible well was 50 ins. thick and at a slightly lower level; its height was 56 ins. with its base at the level -33 ins.

83. GG SHELL PAVEMENT. Close to the well (?)

at GGM was a pavement of shells set in mud, now about 37×30 ins., at the average level $+3$ ins. This pavement sloped from south to north with a drop of about 5 ins. Furthermore, a skirting 5 ins. high, made of shells set in white plaster, ran along the wall for some 45 ins. Here was evidently an ablution place whose walls were protected against damp.

84. GF AREA. The walls of an important building to the north-east (sq. 2\4, A, C) were well preserved and still stood, on an average, 30 ins. high. The large room, or more probably courtyard, GFE, FG, was entered from the north-east through a doorway, 55 ins. wide, whose jambs still stood 12 ins. high. Little of interest was found in this court, which averaged 264×252 ins., save a small remnant of paving made of medium-sized pebbles, which lay at the level $+6$ ins. at its north-western side. Just beneath the wall near by, at the level $+3$ ins., was a burial (No. 2084) which was obviously of earlier date than the wall. Indeed, the objects found in this grave could be assigned to Middle Bronze II, and the wall above it was probably erected in the Late Bronze I period.

The small room GFH was paved with mud at the level -26 ins., and the well-built walls, or rather their foundations, stood 23 ins. high. A similar mud floor, some 6 ins. thick, was found in room GJA, where there was also in the eastern corner a bin built of mud bricks set on edge. This bin was 42×34 ins. in size and stood 18 ins. high. The south-eastern wall of this chamber had a narrow footing, 15 ins. high.

85. GJ AREA. A slight footing along the south-eastern wall of room GJH at the level -9 ins. marks the raising of this wall, and bricks extracted from the lower part of it measured $14\frac{1}{2} \times 13\frac{1}{2} \times 3\frac{3}{4}$ ins.; this portion of the wall still stood 35 ins. high. The slightly narrower upper portion of the wall was 21 ins. high. A mud pavement in this room varied between 3 and 9 ins. in thickness and its surface was covered with a substantial coat of white plaster. A mud-brick platform against the north-western wall was 30×28 ins. and made of two courses of brick. Its surface was 2 ins. below datum and it was probably the base of some kind of bin.

On comparing the plans of the upper and lower occupation in this part of the *tell*, it will be seen that street GFR still preserved its entity, though it was narrowed in the later period to some 88 ins. in width. No attempt was made in this later period to conform with the alignment of the earlier walls.

The south-western wall of the street rested for

some distance on foundations 15 ins. high, made of two courses of irregular sandstone blocks which in turn rested on debris (XXXVIII, 24). The average levels were:—Base of lower course of stone, -11 ins.; top of mud-brick wall, $+39$ ins. On the north-eastern side of the street, where the walls averaged 10 to 62 ins. high, stone was not used in the foundations.

Various features came to light in the large building on the north-eastern side of the street. Room GFX, 117 ins. wide, was irregularly paved with limestone pebbles (XXXIX, 25) at a depth -4 ins. below datum, and the walls of the room stood, on an average, 18 ins. high. The curved wall in rooms GJB and FJ is unusual; it seems to have been a later addition, to allow of communication between the two rooms. A possible doorway in this wall, 35 ins. wide, of whose existence we are not quite certain, may have allowed communication between rooms GFJ and FL.

A badly broken oven in the western corner of room GJB was 18 ins. in diam. inside; it was of the usual cylindrical shape and stood 21 ins. high. That it had seen much use was clear from the heap of ashes in its vicinity. The level of the mud floor around it was 16 ins. above datum.

A narrow aperture, only 15 ins. wide, in the south-eastern wall of room GFT could hardly have been a doorway into the little room beyond. Possibly the latter was a place for storing loose grain which was raked out as required from room GFT; that an oven once stood in the southern corner of this latter room is assumed from the burnt state of the wall. No. 26 is a photograph of this room after partial excavation.

The large size of GFO, 323×192 ins., suggests that it was a courtyard; it communicates with room GJB at its western corner by a blocked-up doorway, 35 ins. wide. No other doorways remained though they must once have existed, and they were in all probability at a higher level in the now broken-down walls which average 22 ins. high.

Room GJD, beyond the courtyard, was badly preserved. Here we came to the limit of our excavations on this part of the *tell*. The mud floor of this room lay at the level -22 ins. and bricks taken from its walls were $15 \times 14\frac{1}{2} \times 5\frac{1}{4}$ ins. in size.

A well-built wall, in some places 40 ins. wide, separates the large building just described from a less important building to its north-west. This last house, or group of houses, had weathered badly. The time at our disposal only allowed of our working up to this point; the north-eastern side of room GJL has yet to be found. In the southern corner

of this latter room, a bin, measuring $47\frac{1}{2} \times 36\frac{1}{2}$ ins. inside and standing 24 ins. high, was built of mud bricks laid on edge. On removing this bin, we found, beneath, a floor of shells set in mud plaster (XXXIX, 27, 28). This floor lay about 1 in. above datum and sloped gently downwards towards the southern corner of the room. In the outer corner of the bin, a large pottery jar had been set in the floor, and its broken top still projected 5 ins. above the level of the shell paving. There is no doubt that this room was originally used for ablutions, and very similar shell-laid floors have been found in various parts of the *tell*. At a later period the room was evidently used for other purposes, the bin was built, and the jar set inside it; that the jar was not used in this instance to drain the shell floor is evident from the fact that it projected above it. Three small pebbles, each with a natural perforation, were found in the western corner of room GJL. The walls of the room still stood, in places, 47 ins. high.

Considerable alterations and additions had made room GJN complex, but the three simple rooms, GJR, JQ and JS beyond, were better preserved and some of the walls were still over 40 ins. high. A doorway, 27 ins. wide, gave passage between rooms GJQ and JR, and in room JS, which measures 133×82 ins., a thick mud floor plastered with white lay at the level +5 ins. with the walls standing some 43 ins. above it.

CHAPTER XV

NOTES ON BELIEFS AND RITUAL

MARGARET A. MURRAY

86. CANAANITE GODS. As the evidence of the early religion of Southern Palestine is scattered in various publications of both ancient and modern authors, it seems worth while to gather the fragments together in one place. The Biblical record is of so much later date that it is not of much help as to the beliefs and ceremonies of the Hyksos population of ancient Gaza. The plurality of gods worshipped before and during the Israelitish period suggests that in early Palestine there was a local deity in each district. Unfortunately the Jewish recorders were inclined to group all the Canaanite pagan gods under the general name of Baal and the goddesses under the name of Ashteroth. The classical and Christian authors refer to the goddess as Astarte or

Atargatis. Here and there, however, a local name emerges, and this is the case at Gaza during the Philistine occupation. Their chief deity was Dagon, a god of food and particularly of corn and fish. There is evidence to show that he was originally connected with the Aramaeans, and was merely adopted by the Philistines when they entered the country. The name occurs in the Tell el Amarna letters in the name of a Canaanite, Dagan-takala. In the saga of Samson the name of the god of Gaza is mentioned once, on the occasion when Samson was taken into the temple to make sport for the Philistines. In Christian times the name of Dagon had disappeared entirely and the god of Gaza was known as Marnas, who was probably the old god of fertility under a new name. The Christians also recorded the worship of a goddess whom they equated with Venus, perhaps because, as another deity of fertility, her rites approximated to those of Aphrodite.

The little that can be known about the religion of Gaza in the Bronze Age is derived from the discoveries at Tell el Ajjûl, from the objects found there and from the positions in which they are found. But even here little can be discovered about the deities worshipped by the people or their rulers. Occasionally a ritual has survived, or there are indications of some of those beliefs which are now stigmatized as superstitions, and on rare occasions the Biblical record is of use in interpreting the finds.

It is possible that the very name of Tell el Ajjûl, "Mound of the Calves," may contain an allusion to a form of worship long since extinct. It bears the same name as the Moabite city mentioned by Isaiah (xv, 8), "The cry is gone round about the borders of Moab; the howling thereof unto Eglaim" (calves). A form of bull worship may have been common to both sites in later times; but no sign of such a worship has been found at Tell el Ajjûl in the Bronze Age. It may have developed under Egyptian influence after the XVIIIth dynasty.

87. SCARAB EVIDENCE. Of the concrete remains the most frequent are the scarabs, many of these being either Egyptian or influenced by Egypt. They were clearly used as amulets; not apparently against any specific disease or danger but as general luck-bringers. They are sometimes found on the bodies of the dead, but it seems fairly evident that they were part of the personal ornaments of the deceased when alive and were not used for the protection of the corpse. They were probably worn threaded on a thin string which would easily break; this would account for the number of scarabs found scattered over every part of the tell and over all the other

ancient sites in the neighbourhood. Possibly some were actually thrown away as not fulfilling their purpose. Some of these scarabs were undoubtedly importations from Egypt, brought in by trade or by visitors, but the vast majority were of local manufacture to supply a local demand. The most common designs are interlaced cord patterns (pl. X, 149-169); next in frequency are designs with cobras, often in combination with the falcon-headed Egyptian god, Horus (pl. IX, 23-31). Occasionally Horus occurs with the crocodile (pl. IX, 18-21). Both the cobra and the crocodile were equated by the Egyptians with a deity, and it is possible that this was the case in South Palestine as well. The crocodile was known in Northern Palestine in the Nahr el Zerka as late as the beginning of this century, it was recorded as existing in Palestine through the Middle Ages; and though there is no mention in Southern Palestine in earlier times, the estuary of the Wady Ghazzeah was exactly the kind of place for crocodiles to make their habitat. The cobra is also an early inhabitant of the south of the country, though seldom seen now. That serpent worship was known at this period may be inferred by the rare occurrence of snakes in relief on vases. It lasted among the Israelites till the destruction of the Brazen Serpent to which they had been accustomed to offer incense (II *Kings* xviii, 4). On the scarabs the representations of both the cobra and the crocodile are so badly made that it is evident they were not copied from life but were unintelligent imitations of misunderstood originals, the maker of the scarab, and probably the wearer also, having no idea of what the original designer intended to represent (for examples of such scarabs, see all five volumes of *Ancient Gaza*). The number of scarabs on which Horus is represented shows a very close connection between Egypt and South Palestine, for they are found at Gerar and Tell el Fara as well as at Tell el Ajjūl. Some years ago I called attention to another close connection between the two countries in the use of the "bundle of life," as Abigail termed the amulet when speaking to David, "the soul of my lord shall be bound in the bundle of life with the Lord thy God" (see *Ancient Egypt*, 1930, p. 65). Such amulets, being made of organic material, have perished without trace in the damp climate of Palestine; and the Hyksos, being an inartistic and illiterate people, have left no record of them as was done in Egypt, where they occur as early as the Old Kingdom.

88. JEWELLERY EVIDENCE. Among the jewels found in graves and in the gold hoards at Tell el Ajjūl are pendants in the shape of crescents made of

bronze, silver, or electrum. These suggest a form of moon worship, of which there are many traces in the Biblical records. The sex of the moon deity cannot be told from these emblems, but it seems likely that the Jewish historians were correct in calling the moon "the queen of heaven," and so identifying her with the many moon goddesses of the Mediterranean area. It is possible that she was the local Venus of Gaza, of whom the Christian authors make mention. All knowledge of the rites used in her cult as moon goddess has vanished, but presumably the cult was the same as in other parts of Palestine and she was probably worshipped at the new moon with the blowing of trumpets and the offering of cakes.

89. GOLD STARS. Whether the figures of stars, which also occur in the gold hoards (pl. VI, 6, 7, 8), are to be regarded as amulets is a difficult point. In late pre-Islamic times the Arabs, with whom the Gazites were in close contact for many centuries, were certainly star-worshippers, and it is quite possible that the Early Hyksos, who were also nomads, may have had the same worship. There is, however, nothing to show that such a cult existed at Tell el Ajjūl, and it seems too sophisticated a cult to have been used so early as the Middle Bronze Age.

90. HAT-HOR AMULETS. A certain number of figures of deities have been found, of which the exact date is not forthcoming, though all are of the Bronze Age. A large proportion represent a goddess, who is sometimes shown with the unmistakable curled locks of the goddess Hat-hor (pl. VI, 12). The earliest known shrine of Hat-hor is at Serabit el Khadem in the Sinai peninsula, though heads of the goddess with cow's ears and horns decorate the dress of Nar-mer, one of the primitive kings of Egypt. The importance of the Sinaitic shrine is so great that one may be justified in regarding Sinai as one of the chief distributing centres of the cult. Sinai and Gaza were linked by trade, from early times, and the worship and ritual of Hat-hor would easily be carried to the great seaport in the southern part of Palestine. In the gold hoards the figures of Hat-hor, though rare, are important as showing that they were worn as amulets in the Late as well as in the Middle Bronze Age.

Figures of a nude goddess made in sheet gold were found in each of the hoards. If Professor Petrie is correct in thinking that they were brought from Syria, or at least from the north of Palestine, they cannot be connected with the religion of the Hyksos population of ancient Gaza. On the other hand it

must be remembered that a goddess was a prominent deity in the city in Christian times, and was deeply revered by the women. The figures are of the peculiar type which were probably used in the secret rites of women (*Journ. Royal Anthropol. Inst.*, 1934, p. 99). From these, men were rigidly excluded; consequently the rites have never been described, for the women were illiterate. (See account by Mrs. Crowfoot of a *zar* rite.)

91. FALCON AMULETS. The flying falcons, cut from sheet gold and outlined in granular gold (pl. VI, 1, 2, 3), again suggest an Egyptian connection, though entirely unlike anything known in Egyptian art. The chief bird cult in Palestine of which there is any record is of doves, but these birds are very definitely falcons.

92. HOLED STONES. Other amulets found at Tell el Ajjūl are the natural pebbles which are pierced through by a natural hole. These differ from lumps of limestone with biconical perforations (see *A.G.* II, p. 9, pl. xxii, 1). It is uncertain whether these naturally pierced stones are unique on this site or not; at any rate, if they have been found elsewhere in Palestine they have been ignored. The pebble is usually a rounded amorphous water-worn stone, not more than 2 ins. long, sometimes smaller. Some are rather rough and have a number of surface holes, but one hole at least pierces the stone right through; other pebbles may be so smooth as to be almost polished and the hole is so sharp as to look artificial. At Tell el Ajjūl these pebbles had been specially brought to the site; no such stones occur naturally on the mound, but are nearly a couple of miles away on the seashore. Thirty-four such pebbles were found in this excavation, and having regard to the rarity of such naturally pierced stones it seems clear that they were prized by the ancient inhabitants. Though the greater number lay scattered in different parts of the site, three were found together in one room (pl. III, chamber GFT), and one was in a tomb (No. 2089). The part of the site excavated during this season was entirely covered with houses, and the stones must have been of use to the people in their homes. It is the custom among excavators, when they find pierced pebbles, to call them net-sinkers and take no further notice of them.

Stones with natural holes in them are regarded in many places as being endowed with magical properties, and the use of them in modern times may throw light on their use in the Bronze Age in Palestine. They are always rare, and their rarity probably made them valuable; some are small enough to be

worn on the person, being pierced for suspension. In Europe they are used for many purposes. They are worn by shepherds to ensure success in the lambing season and to prevent foot-rot in the flock, by horse-breakers to "keep the devil out of the horses," by ordinary wearers as a prophylactic against nose-bleeding, against lightning, and against injury from savage cattle. Hung up over a byre or pigsty, they will preserve the animals from witchcraft and disease. When the holed stone is merely a general luck-amulet, its use is neatly summed up in *Proverbs* xvii, 8, "A gift is as a stone of favour in the eyes of him that hath it; whithersoever it turneth, it prospereth."

Another form of amulet or perhaps a badge of devotion to a deity may be found in the ear-rings. The earliest reference to such a custom is when Jacob commanded his household to "Put away the strange gods that are among you, and be clean, and change your garments: . . . And they gave unto Jacob all the strange gods which were in their hand, and all their earrings which were in their ears; and Jacob hid them under the oak which was by Shechem" (*Gen.* xxxv, 2, 4).

93. SHRINES. So far, no temple has been unearthed at Tell el Ajjūl. The occurrence of washing stands (*XXXIX*, 28), shell-paved, built open to the street and adjoining a whitewashed room, shows that places were probably set apart for worship in connection with the larger mansions. Professor Petrie regards these places for ceremonial ablution as belonging to the ancient system of local worship which he found in Sinai. They seemed to be early forms of the Brazen Sea and *hanafiyeh*, and were associated with incense altars and burnt sacrifices (*Petrie, Researches in Sinai*).

Another shrine was discovered this year (pl. *XXXVIII*, 21); it is in a room (GGD) in the Great Tower (pl. III) described in p. 28, sect. 82. It consists of a recess in which is a shelf, presumably for offerings; the back of this shelf is inlaid with shells set in white plaster, and above is a small niche plastered with white gypsum, which appears to have been made for an image. This shrine is considered to belong to the second period of the site. On the pavement of the floor was a layer of ashes, 12 ins. thick, the remains of a conflagration. Such private shrines were known in Palestine among the early Israelites, as the story of Micah shows.

94. HORSE SACRIFICE. The problem of horse sacrifice is one which confronts any student of the Palestinian Bronze Age. The discoveries made by Professor Petrie at Tell el Ajjūl in previous years as

well as our discovery during the present excavation (pl. XXXIX, 32) point to a well-established custom of sacrificing horses (*A.G.* II, pp. 5, 14). The animal was killed and wholly or partially dismembered, and there is evidence to show that part of the flesh was eaten. Had these been the burials of favourite animals the bodies would have been buried entire; had the horses been intended to accompany the master to the next world some part at least of the harness would have been buried with them; had they been killed for an ordinary feast the whole animal would have been eaten and only the bones left. But the evidence points to a sacrifice; and in one instance the position of the burial shows that it was a foundation sacrifice (*A.G.* II, pl. L).

A horse sacrifice can only belong to a people to whom the horse has been known from a very early period, and who probably lived in a country where the animal was indigenous. In Egypt the horse was introduced at a comparatively late date when the religion was already stabilised; it was therefore not regarded as a sacrificial animal. In Western Europe where the horse was hunted for food by palaeolithic man, sacrifices of horses are recorded as taking place in pagan times; in the Middle Ages the god appeared, in more than one place, in the guise of a horse. In England there is still so strong a prejudice against eating horse-flesh as to amount to a tabu.

The Hyksos, wherever they came from, brought the horse with them (*A.G.* I, p. 3, pl. viii) and would probably have a horse sacrifice. Other Eastern races who practised the same sacrifice were the Aryan-speaking invaders of India and the Chinese, and in Europe the Scythians. These last are important, as archaeological evidence is now beginning to point to the Caucasus as one of the early centres of distribution of cults and civilisation (*Ancient Egypt*, 1926, pt. II, p. 41). Here one type of horse was indigenous and was probably tamed at an early period; and here the sacrifice of the horse was continued till classical times. The Scythian sacrifice of the horse was consummated in the ceremonial described by Herodotus. The forelegs of the animal were tied together and the creature was then pulled down by the sacrificer. "As the victim falls he invokes the god to whom he is sacrificing; then he throws a halter round its neck and having put in a stick he twists it round and strangles it; without kindling any fire, or performing any preparatory ceremonies, or making any libation, but having strangled and flayed it, he applies himself to cook it." (Herodotus iv, 60.) At Gaza, however,

there is nothing to show how the animal was killed; the one thing that is certain about the sacrifice is that the dismemberment was very fully performed (*A.G.* I, pl. viii). Even in the most perfunctory examples the head and legs were removed; they were not necessarily eaten, though it seems likely that a feast followed the sacrifice and that all the bones were not always buried. This appears to have been the case in the burial found this year; only the head and one leg were found.

In his account of animal sacrifice among the Scythians, Herodotus adds some further information as to the cooking of the meat. "When they have flayed the victims, they strip the flesh from the bones, then they put it into cauldrons . . . having put it into these they cook it by burning underneath the bones of the victims . . . thus the ox cooks himself, and all other victims each cooks itself." This method is alluded to in *Ezekiel* (xxiv, 3-5), "Set on a pot, set it on, and also pour water into it: gather the pieces thereof into it, every good piece, the thigh, and the shoulder; fill it with the choice bones. Take the choice of the flock, and burn also the bones under it, and make it boil well . . ." This method was known in the early period of Egyptian history, for in the Pyramid Texts (W. 399 *seq.* transl. Faulkner, *Journ. Eg. Archaeol.*, x, pp. 98, 99) the divine king does this to his victims: "Wenis is the Lord of Food-offerings, who knots the cord, who himself prepares the meal. . . . It is the Great Ones who are in the north of the sky who place for him the fire to the kettles containing them, with the thighs of the oldest ones. . . . His surplus of food is more than that of the gods, being cooked for Wenis (Unas) with their bones." As this method of dealing with the sacrifice was practised by neighbouring peoples both before and after the time of the Hyksos, it is not too much to suppose that they, the Hyksos, also cooked the sacrificial meal with the bones of the victims. This would account for the absence of bones in the burials of the horse sacrifices at Tell el Ajjûl.

It is a question whether the festival of El Muntâr at Gaza should be connected with the horse cult at Tell el Ajjûl. The little hill of El Muntâr is the traditional place to which Samson carried the gates of Gaza and has therefore a kind of sanctity. It seems to have been a place of pagan worship in pre-Christian times. The festival, which occurs in April, appears to be both pre-Moslem and pre-Christian, and is still the most important festival of modern Gaza. The chief feature of the festival is horse-racing which, though well known as a religious

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rite in pagan Europe, was never, as far as I am aware, practised as an act of worship in Moslem or pre-Moslem days nor among the Israelites. It is true that Mark the Deacon, in his *Life of St. Porphyry*, says that the horse-racing was instituted at Gaza by the Romans, but it seems more than likely that the Romans found the festival there and kept it up. It may be a relic of the Philistine occupation or it may even date back to the time of the Hyksos.

95. DISMEMBERED LIMBS. A point which is rather a problem, in connection with the horse and human bones found at Tell el Ajjūl, is noted by Professor Petrie. Again the Scythian custom, as described by Herodotus, suggests the method of sacrifice. The object to which the Scythian sacrifice was made was a rusty scimitar, the emblem of the war-god. One in every hundred of the captives taken in battle was sacrificed. Wine was poured over the head of the victim, then his throat was cut and the blood caught in a bowl; this was carried up the mound on which the scimitar stood and the blood was emptied out over the emblem. "But below at the sacred precinct, they do as follows: having cut off all the right shoulders of the men who have been killed, with the arms, they throw them into the air; and then having finished the rest of the sacrificial rites, they depart; but the arm lies wherever it has fallen, and the body apart." Such a sacrifice, with its accompanying dismemberment of the arm, must surely be allied with that strange bone-field found by Professor Petrie in 1932 near the mouth of the tunnel at Tell el Ajjūl (*A.G.* I, p. 4, pl. vii, and II, p. 14, pl. I). A single complete human arm was found with other severed limbs, besides the remains of dismembered animals. This bone-field has been hitherto unexplained, and I would suggest that it belongs to the same type of sacrifice as that in use among the Scythians in the time of Herodotus.

96. BURIAL CUSTOMS. In the burials of the Hyksos population of Tell el Ajjūl, there is no special orientation, but the bodies are almost always laid flat on the back, the arms crossed on the breast. An interesting point is that after the earth had been filled in to the grave, a lamp was placed above the body and lighted. It is probable that the lamp was kept burning for some time after the burial, possibly till the time when the spirit was supposed to take its final departure from this world. Young children were buried in large jars, generally with the head at the mouth of the jar. In all burials there were food vessels and often personal ornaments.

CHAPTER XVI

TRAVERSE DOWN WADY GHAZZEH

ELINOR W. GARDNER

97. PREFACE. *Report on a traverse* (down Wady Ghazzeah from Tell Fara to Um Gerar). At the exhibition of objects from Professor Sir Flinders Petrie's 1930 expedition, certain shells were included from various prehistoric mounds of the Wady Ghazzeah, South Palestine. Among these were two genera—*Aspatharia* and *Mutela*—which are not known to be living at the present day in Syria or Palestine and, indeed, have not been recorded outside of Africa.

The question then arose: were these shells traded with the inhabitants of Egypt, or did they live in the waters of the Wady Ghazzeah of the Bronze Age and earlier periods? By the kindness of Sir Flinders Petrie and with the valuable help of his lieutenant Mr. J. L. Starkey, who organized my expedition, I was enabled to spend a few days up the wady searching for the shells *in situ*.

I failed to find them, and therefore the question for the moment remains unsettled, since it is very possible that further search here or in some other wady might reveal them.

Modern shells were, however, collected from the pools and streams near the springs of Shellāl, and a certain number from the valley deposits. These may be of some interest, as little has been published about the land and freshwater shells of Palestine. They have been submitted to Major M. Connolly, who will report on them.

Further, a few geological observations were made, which might be of use to other workers. These are given below, but it will be understood that where age relationships have been suggested, these are purely tentative, and remain to be proved or disproved by thorough and detailed work in this and neighbouring regions.

98. TOPOGRAPHY. The Wady Ghazzeah drains more or less due north from the high lands of Beersheba. In the area examined two very marked topographic divisions can be made out, which must be of significance in the history of the wady and of its inhabitants.

From the sea near Gaza for about 9 miles southward to about the 200 ft. contour line (see Gaza, Shellāl sheet 1: 40,000 and Sketch Map, pl. XLIII), the wady is relatively narrow and is bounded by nearly vertical cliffs 20 ft. or more high, which lead up directly to a gently undulating plateau forming the general level of the country.

South of the 200-ft. contour the bed of the water-course is separated from the actual wady edge by half a mile or more of deeply dissected country, with numerous spurs and isolated hills, rising 100 ft. or so above the wady floor. The distance from side to side in this region is, therefore, about a mile, while to the north it is only about 200 yds.

This fact might be accounted for in various ways : (i) by difference in hardness of the material traversed ; (ii) by difference in age of the two areas ; or (iii) by differential movement. With regard to the first point, there can be little doubt that the soft wind-blown loess forming the surface deposit over a great part of the area is much thicker in the south than in the north, where the harder marine sands and consolidated dunes either outcrop or are but a few yards beneath the loess. Moreover, the latter in the north is more argillaceous and resistant to weathering than in the south. The other two possibilities require wider work for their discussion.

99. DESCRIPTION OF DEPOSITS. The deposits in this part of the Wady Ghazzeah fall into two main categories : (i) those of marine origin, consisting of conglomerates, sandstones, clays ; (ii) those of terrestrial origin, which may be further subdivided into : (a) loess, mainly of aeolian origin, (b) fluviatile conglomerates and sands, (c) loams and clayey sand of an old land surface.

The loess is the best represented of all these deposits, forming the greater part of the plateau, especially south of Tell Jemmeh.

The marine beds crop out in various places (marked "M" on sketch map, pl. XLIII) mostly in the wady floor, or as low platforms and cliffs bordering it. This series is definitely the oldest in the part examined, and must form the rock floor of the plateau beneath the loess. The fossils, specimens of which had been previously examined by Mr. Cox of the British Museum, are not distinctive and belong to living species ; the age of the deposit is therefore still undetermined.

The relative positions of the fluviatile and aeolian deposits are not easy to make out. Both the loess and the gravels probably represent more than one period of such accumulations, but much careful work is needed to distinguish them.

The various deposits will now be described in detail.

1. Marine deposits. These beds were seen at intervals from just south of Tell Fara (M.1) to a point about a mile north of the junction of the Wady Sheria (M.7). They consist mainly of conglomerates and sandstones, which are hard, compact and light

coloured, and generally contain numerous remains of oysters and other marine shells. Current bedding is a noticeable feature, especially in the sandstones. Being considerably harder than the loess, they outcrop as steep cliffs and scarps in the wady side, and are much less dissected than the softer materials.

Pl. XLIV. Fig. 1. Wady Ghazzeah N. from Tell Fara, weathering of marine beds (L) and loess (R).

South of Tell Fara (M.1) the sandstones form three-quarters of the cliff, the top of which touches the 330-ft. contour. Above them lie the dark loess deposits, which are here very sandy.

Fig. 2. Wady S. of Tell Fara, W. side, cliff of marine sandstone overlain by loess.

It is noteworthy that though so well exposed in the western cliff, no trace of the marine sandstones was found in the eastern side immediately opposite the spot shown in fig. 2. This inequality in the two sides of the wady was a marked feature in many parts, and will be discussed below.

North of Tell Fara there is a very good exposure of the marine beds extending on both sides of the wady to within 900 yds. of the broken railway bridge at Shellāl (M.2). The conglomerates are well developed and form platforms and vertical cliffs. One such platform, about 6 ft. above wady level on the E. side, is seen in fig. 3. The sandstones overlying the conglomerates outcrop in the W. cliff.

Fig. 3. Marine conglomerates and sandstones in wady, N. of Tell Fara, looking S.

The total thickness in this outcrop seems to be about 60 ft. and the dip a northerly one at the Shellāl end of the exposure.

Fig. 4. Marine conglomerates and sandstones, dipping N., wady E. side near Shellāl railway bridge.

From here to just N. of the Shellāl road bridge, a little over a mile, no exposure is seen, and then only a small one of white compact sandstone at wady level and for a few feet above it (M.3).

The next big exposure of the marine beds is about $1\frac{1}{4}$ miles N. of Shellāl road bridge (M.4), where the sandstones form cliffs on the concave bends of the wady, while conglomerates with shells rise 30 ft. or so above the wady floor on the W. side.

For $1\frac{1}{2}$ miles little is seen of the marine beds, but where the wady makes two sharp bends there is a high cliff of light-coloured marine clays, W. (M.5) but not E. $1\frac{3}{4}$ miles further N. on E. bank is a small outcrop of white sandstone, like the marine in appearance, but without shells (M.6). This appar-

ently dips S. and if this is so, the structure here is a shallow syncline with the clays in the middle.

The last big exposure of marine beds was seen in the Wady Sheria, $\frac{1}{2}$ mile or so from its junction with the Wady Ghazze (M.8). They are first developed on the N. side only, but a short distance higher up they form the floor of the wady and the southern cliffs as well. The conglomerates are overlain by sandstones, and appear to pass up into a cellular non-fossiliferous variety, which may represent dune material.

2. *Terrestrial deposits.* (a) Loess. Geologists seem agreed that the Palestine loess was accumulated by wind action, but its age and source of origin have not been definitely settled. Fig. 5 shows a loess cliff at the side of the wady, in which the characteristic vertical jointing is well developed.

Fig. 5. Loess cliff W. side of wady, N. of Shellāl.

Wind bedding in the sands is very clear in some places, as at M.5, where the marine clay cliff ends abruptly on the N. side, and the loess is banked against it. Here also thin clay and pebble bands can be traced, probably due to local down-wash. The occasional presence of irregular ramifications of carbonaceous matter may indicate scanty vegetation.

Land shells occur fairly abundantly, either scattered through the deposit or in lines. No fresh-water forms were found, and the variety among the terrestrial species seemed to be small, but further collecting is needed to establish this.

In some cases the shells were associated with a definite line of small, irregular, sandy concretions, such as may form on any arenaceous desert or semi-desert after a heavy shower. It is suggested that these lines may represent the actual surface of the country at the time of their formation.

The change in character and thickness of the loess in passing from S. to N. has already been noted.

Fig. 6. Dissected loess cliffs opposite Tell Fara, typical weathering.

The loess is considerably later than the marine series, doubtless, since the latter had been uplifted, consolidated, and deeply eroded before its deposition. In many cases it can be seen banked against the eroded edges of the marine sands and clays, in others it overlies them, as at M.1.

Fig. 7. Loess banked against marine sandstones (on L.), E. side of wady, N. of Shellāl (M.4).

A marked feature in the S. region is the apparent intimate association of coarse gravel with the loess near wady level, but sometimes running to considerable heights. Further and more detailed ex-

amination may show, however, that this is re-deposited loess, or that the gravels are really of a different age. Some evidence for this is seen $\frac{1}{2}$ mile N. of the Shellāl road bridge on the E. side, where the gravels appear to cut definitely *through* the loess.

Fig. 8. Coarse gravel apparently cutting through loess on E. side of wady, N. of Shellāl.

(b) Fluvatile gravels and sands. The conglomerates mentioned above fall under this heading. They are, as a rule, distinguished from the marine types by their greater coarseness and lesser degree of consolidation; further, no marine shells are found in them.

Besides the loess gravels there are others, similar, which form in places a well-defined terrace, 16 ft. above wady level. This is particularly well seen on the W. side of the wady at the Shellāl road bridge, and north of it. It forms a prominent spur S. of the bridge. The cliff face is 12 ft. or more high, and consists of coarse gravel, in places alternating with reddish sands.

Fig. 9. 16 ft. gravel terrace, W. side of wady at Shellāl road bridge.

To the S. the gravel splits up and eventually gives place entirely to sands.

Fig. 10. Cliff of 16 ft. gravel terrace, W. side of wady, S. of Shellāl road bridge.

The outcrop can be traced N. for $\frac{3}{4}$ mile or more, and here appears to overlie the marine sandstone of the wady floor (M.3). From its position, therefore, it might be a higher conglomerate in the marine series, but the absence of shells, its coarseness, and state of consolidation distinguish it from the typical marine deposits developed elsewhere.

Possible indication of its age is given by the presence of rolled palaeoliths on the surface, half way down the cliff face, and one actually in the gravel. This association needs further examination, but the tentative hypothesis formed at the above exposure was strengthened when a very definite 16 ft. terrace was found on the W. bank of the wady at T. This is cut in loess, and the platform is backed by high loess cliffs, which still show the sweeping curve of a bay, now truncated by the modern wady course.

Fig. 11. 16 ft. loess terrace, backed by high loess cliffs. A 10 ft. terrace lies between it and the modern stream course in foreground.

Below the 16 ft. terrace is one at 10 ft. which follows more or less closely the modern wady line, while the 16 ft. one diverges from it. The 10 ft. terrace was found in other parts, and seems to

represent a definite stage, but there appeared no indication of date.

(c) Loams and sands. At Shellāl road bridge on E. side of the wady near 'Ain Harara is a sticky greenish-yellow sand with thin seams of black loam at intervals. These deposits form a small cliff about 5 ft. high. The loams are thicker towards the top, and contain land shells, which appeared to be more varied than those in the loess.

Fig. 12. Low cliffs of sand and loam at 'Ain Harara (each side of camels).

This deposit can only be traced for 100 yds. or so to S., but to N. similar sand without loam forms the base of the low cliff immediately bordering the wady course. Here it appears to be banked in front of the above-mentioned gravel on E. side. A clay appears on the same horizon as the sand just by the bridge.

Wady Sheria, Wady Sharba and Wady Nukhabir. In these wadys a new type was found which apparently does not occur in S. region. This is a red sandrock (R.S.), full of light coloured sandy concretions like those described in the loess. They are, however, scattered irregularly through the sand. In the Wady Sheria this sand seems to lie on the eroded surface of the marine series and to be banked up against it. No shells were found in it, and since it is associated with the cellular sandstone it may represent an old dune line.

In the Wady Nukhabir the great irregularity in the surface of these deposits is very apparent.

100. BRONZE AGE AND LATER LEVELS. The failure to find the Egyptian shells is in all probability bound up with the failure to determine the water level of this period. The position of these and earlier Bronze Age sites is of little help, since they are all, with one exception, at the plateau level.

Evidence of considerable erosion since that time is seen in site H near Shellāl, now on a small almost isolated hill, which certainly seems to have been cut away since its occupation by Bronze Age people.

Tell Fara and Tell Jemmeh, too, have been cut into by the downward swing of the meanders which, in the first stages of each settlement, probably lay a short distance to S.

At Umm Jerar a section of bedded silts and sherds has been cut into by the lateral swinging of the main wady. These sherds are of Roman Age, and appear to have been washed down into a small side wady, which emptied into the main one further W. No sign of any late general submergence bringing in the sea was found either here or elsewhere.

SUMMARY AND CONCLUSIONS

1. The Wady Ghazze, between Tell Fara and the sea, consists of two topographic regions: a northern in which the wady is relatively narrow and bounded by simple cliffs, and a southern where the wady is broad, and the sides deeply dissected. The change comes at about the 200-ft. contour.

2. The wady is cut through marine conglomerates, sands and clays forming the basal beds, and overlain by fluvial gravels and sands and aeolian loess. The latter rests on a very irregular marine surface, whose deposits seem to have been folded into a shallow syncline before being deeply eroded.

3. A 16-ft. terrace cut in gravel and loess marks a definite stage in the fluvial history of the region. There is slight evidence that it may be palaeolithic. Loess appears to overlie the gravels of this stage in some parts, but this requires confirmation.

4. A 10-ft. terrace, undated, is developed fairly extensively.

5. Sands and loams of an old land surface are found near Shellāl, but their relation and age are unknown.

The possible history of the wady as deduced from the above facts is as follows:—

1. Deposition of marine series, the coarsest beds being apparently the oldest.

2. Uplift, consolidation and gentle folding, followed by extensive erosion. Some of the higher gravels may belong to this episode.

3. Deposition of the main loess on the eroded surface, probably levelling it up to a fairly uniform height.

4. Re-excavation of the old drainage lines, and the cutting of new ones in the marine series. This process is still incomplete, as is shown by the frequent occurrence of loess on one side of the wady and marine beds on the other.

5. Certain states in this re-excavation are more marked than others. A 16-ft. terrace represents an important episode which may be palaeolithic. The cutting in the loess shows that this loess at least must be older than this stage. If, on the other hand, loess really overlies the 16-ft. gravel, and is not just washed superficially over it, a second loess episode must be intercalated here.

6. The 10-ft. terrace and the loams and sands seem to represent the last marked stage in the history of the wady. Minor modifications in historic times are produced by the downstream and lateral swing of the meanders. To this is due the dissection of Tell Fara and Tell Jemmeh on their eastern sides.

CHAPTER XVII

SANHEDRIYEH

FLINDERS PETRIE

101. ROCK-CUT TOMBS. The rock-cut tombs around Jerusalem are not a subject of official care. The finest group, believed to be those of Queen Helena of Adiabene, a convert from beyond the Tigris, were bought up and cleared privately, and then consigned to French protection in Turkish days. But no care has been given to the fine examples of rock cutting in the tombs of Sanhedria, north of the city. One of the best is inaccessible from being a rubbish heap; others were cut away by quarrymen or built over. A few plans are given in guide books, and the most general account is that by Professor Galling in *Palästina-jahrbuch des Deutsch. Evangel. Inst.*, 1936. That gives an outline map of the distribution of tombs from Sanhedria down to the Wady en Nar, and some little plans. A full and accurate study of them is needed before they disappear. In the north the ground is already pegged out in building lots.

A neglected question has been the accurate measurement of the rock work in order to recover the cubit or foot used by the workers. For this end Dr. Mackay and Mr. Pape gave some days to measuring the best examples. Complete plans, with the rougher loculi, did not enter into the present question, but more than a dozen tombs promised accurate results (see pls. XLV, XLVI).

Plans here are given to show the positions of the measurements.

102. UNITS OF CUBIT AND FOOT. The results of the dimensions give the working unit in 3 tombs by the Egyptian 20·7 cubit (20·6 to 20·8); 5 tombs by the Jewish 21·16 cubit (21·0 to 21·4); 3 tombs by the Punic 22·19 ft. (21·96 to 22·48); 1 tomb by the Roman foot 11·6. The Jewish cubit is usually reputed as 21·4; the results of plans here are two of 21·1 and two of 21·3. By Haram, Hebron, 20·88 or 21·28 mean 21·08; Perso, Assyrian, Jewish cubit already accepted 21·35.

CHAPTER XVIII

MALFUF, NEAR 'AMMAN

FLINDERS PETRIE

103. PHILADELPHIA. The land of Ammon, across the Jordan eastward, is in many ways a very different land from that of Palestine westward. The flat tableland of limestone is about 3000 ft. above sea

level. On the east it stretches away to the Arabian desert, and its western edge descends precipitously more than 4000 ft. down to the sunken course of the Jordan and the long lake of the Dead Sea.

The land has a shallow capping of fertile brown soil, ranging up to 500 ft. above the general plateau, and here corn and other crops flourish in places, and could be made to cover the land, if there were any population to work it. Deep gorges, cut through this, carry the rain into the Jordan valley, a neglected and malarial strip of land. This high level plain of fertility, drained almost dry, extends for dozens of miles and, though covered at intervals with crops, the management is so ineffective that there is many a mile without a single farm or solitary worker. It is a wasted shadow of its former prosperity, before the nomadic Arab expelled the old populations of Reuben, Gad, and Manasseh.

The capital of the Ammonites, from ancient times, has always lain at the source of a spring from which flows an abundant stream. This starts about 200 ft. below the plateau at 'Amman, now the capital city of Trans-Jordan. This was the ancient Rabbath Ammon, afterwards named Philadelphia by the Greeks.

From this stream-head the gorge deepens, through about 80 miles of turns, along an area 25 miles across, to debouch into Jordan. Anciently the brook Jabbok, it is now known as Wady Zerga, the valley of the blue river.

'Amman lies on the limestone plateau, in a long branching valley, the steep sides of which are now ascended some 200 ft. by zigzag roads, so that the town can be expanded by suburbs.

Of the ancient city Philadelphia, the chief feature is the Graeco-Roman theatre. This was scooped out in the rock face of the main ravine between two of the side gorges, and was approached by a colonnade, still standing. It must have held 3000 to 4000 spectators, in three great tiers reached by 38 steps. The old seating of limestone slabs is complete and most of the doorways are intact.

Among the stones lying loose in the theatre, I saw a slip of stone from the masonry inscribed with GORDIA . . . , the evidence of a restoration here. The name Gordian, not necessarily that of the emperor himself, shows it to belong to the middle of the 3rd century.

One side of the theatre is in shade during the afternoon. At this side is the entrance, the columns being of brown limestone. On the opposite side of the road, southward, are some large stone buildings, which may have been connected with baths. The

whole front of the theatre slopes down to the stream, which flows eastward before it reaches the Jordan.

The city of Philadelphia had its own mint, and continued to strike its own coinage till the Arab invasion, the latest of the coins having a large Greek *phi*. In small letters at the side was the Arabic name AMMAN, and on the reverse the figure of the Emir.

104. AMMONITE TABLELAND. The high tableland of the Ammonite country is cut by many shallow valleys, sometimes reaching down to the rock basis. Among these, the most attractive for ancient building was the part named Malfûf. Perhaps the round towers scattered about this area were thought to resemble the very round cabbage, *malfûf*. It is open country stretching from one to six miles west of 'Amman. A road crosses this, leading down to the Circassian settlement of Wady Sir.

Halfway to it, on wild open land, we pitched two small tents alongside our old bus, and for a week or two, Pape and Kiralfy investigated the various ruins of buildings which seemed the more promising. We ourselves acted guard to the small encampment, while they scoured the neighbourhood.

The ground is covered with ruins of deserted farmhouses about every half mile. These were originally of stones and mud, but now the rains have washed away the binding. Of the poorer habitations, merely banks of loose stones remain, but where there was better masonry with large blocks, the ruins still stand erect.

The best defined of the buildings is at Khirbet es-Sar, and is a hall about 60 ft. long, with seven windows in each side. These are round-headed, with a continuous moulding, as seen in the photographs (pl. L, 16, 17). This can scarcely be anything but a church. At the west end is a square building with pieces of columns, and a cistern, and this is evidently the baptistery, separate as in early Italian churches. The date is indicated by pottery scattered around, of about A.D. 300. This was, then, a church of Constantine age, ruined by the Arab invasion. In this building, blocks of two or three tons are used, but this does not necessarily imply an earlier date.

The oldest class of buildings in the district of Ammon are circular stone towers, but very few potsherds can be seen around them, owing to the depth of ruins covering the ground. Dr. Nelson Glueck attributes these towers to the Iron Age, and the square buildings to later times.

All of this region needs more than surface observation, and should be worked with good diggers, to remove the waste and clear up the bases of the

walls. Following on a season at Gaza, we were too late to attempt such work, as the summer heat was setting in.

DESCRIPTION OF SITES

CARL PAPE

Plans, pl. XLVIII, views, pls. XLIX, L

105. UMM SWEIWINA. Site No. 1 (C. R. Conder, *The Survey of Eastern Palestine*. Vol. I, p. 251). This is an extensive site, in fact a small *tell*, about $1\frac{1}{2}$ miles south of the S. police control post at 'Amman. Two small wadys and an intervening hill lie between it and the second site, el Hemraniyeh.

There are several square towers and a complex of smaller buildings, the walls of which are of heavy coursed rubble. At the north end is a large cavern (originally a water cistern?). The floor has been considerably silted up, and later rough walls built to form a rude stable. The size is approximately 100×70 ft., but one arm of the cavity goes much further back. There are a large number of cisterns, so many that there was possibly one to each of the larger buildings. The cultivation was at its best in Trans-Jordan, and the half-grown crops rendered it difficult to search the surrounding fields thoroughly for pottery; also the rank growth of many varieties of thistle hindered measurement at the base of many of the walls.

Two of the square towers measured, respectively, 35 ft. 6 ins. \times 41 ft. 8 ins., and 39 ft. \times 42 ft. 6 ins. As Dr. Glueck has noted at similar sites, such as Khirbet Morbat Bedran (*B.A.S.O.R.*, 68, p. 19), there is no trace of an outer city wall.

106. EL HEMRANIYEH. Site No. 2 (C. R. Conder, *Surv. E. Pal.* Vol. I, p. 109. *P.E.F. Annual*, 1911, p. 31 and pl. VI). Some $2\frac{1}{2}$ miles S.W. of 'Amman, on a small hill in the fork of two wadys, are the ruins marked El Hemraniye on the Government map and el Humrawiyeh on the map of Conder and Mantell. They consist of a small oblong tower, flanked to west and east by lower attached buildings, and a series of fairly extensive outbuildings, none of which is more than two storeys high. The general resemblance of the main building to site No. 5 at Malfûf was at once evident to us. We concentrated on the tower and did not take any measurements of the outbuildings. We could not identify this tower on Newton's plan, although we certainly visited el Hemraniyeh. In the modern map there is a distinctive right-angled turn in the 'Amman-Na'ur road and the distance walked exactly tallied.

Pl. XLVIII. The series of chambers made this

tower the most instructive site we visited. An inspection of the accompanying sketch-plan will give a much clearer idea of the lay-out than any description. The entrance to A is blocked up by fallen rubble and we entered through a broken roof-slab in the E. end (pl. XLVIII, 2). Though the chamber was half filled with debris we were able to crawl through the connecting doorway into B and take measurements. There was not sufficient space to enter C, D, or E, though by flashlight we could clearly see the doorway entering into D. It was possible to estimate the position of the partition walls between C, D, E, and F from outside.

The tower differs from those of other sites; the coursed rubble varies in size, the blocks being either larger or considerably smaller. There appear to be straight joints between the tower and the flanking buildings. In the S. half of the tower at G, Mr. Kiralfy discovered what I take to be a series of inclined ramps leading to the various floors of the tower. This is uncertain, as it was in ruins and it was difficult to say which stones were in position.

I entered a room at H in the N. part of the tower and examined the system of corbelling used to support the roof.

107. EL MALFUF. Site No. 3, large tower (C. R. Conder, *Surv. E. Pal.* Vol. I, p. 193. *P.E.F. Annual*, 1911, p. 22 and pl. IV).

Pl. XLVIII, 3, 4. At the time we examined this large round tower we unfortunately did not know that Dr. Duncan Mackenzie had written an elaborate account with an excellent plan by Mr. F. G. Newton. Much of our work was thus merely repetition though there are several points on which we differ. I believe that the square rooms now connected with the tower were a later addition.

The tower is approximately 66 ft. 8 ins. in diam. and is steeply battered on the outer face. The interior is filled with fallen debris so that it is impossible to say whether the inner face had a similar batter. The wall varies in thickness but averages about 7 ft. Typical dimensions in inches of the rough-hewn blocks are $50 \times 42 \times 10$, $45 \times 23 \times 13$, $32 \times 28 \times 11$. These are laid in outer and inner layers with a certain amount of overlapping. There appear to be no through bonding stones, though some of the original mud and small stone core-filling is still in position.

The present height of the tower is about 15 ft. Two air photographs of the tower and the surrounding country were published in *Antiquity*, 1929, III, pp. 344, 345, with a short descriptive note by Mr. O. G. S. Crawford.

108. EL MALFUF. OTHER BUILDINGS. Site No. 4 (*P.E.F. Annual*, 1911, pp. 5, 19 and pl. III). Small round tower. This tower is 41 ft. 8 ins. in diam. with the wall varying in thickness from 56 to 62 ins. As in all the other round towers and large square forts, it is formed of large blocks of chert with a minimum of dressing. In most places the wall is only one block thick. Some of the blocks average $63 \times 39 \times 16$ ins.

EL MALFUF. Site No. 5 (Mackenzie's "Residence and Dolmenic Tomb," C. R. Conder, *Surv. E. Pal.* Vol. I, p. 193. *P.E.F. Annual*, 1911, pp. 4, 8 and pls. I, II). This has been described in such detail by Mackenzie that the following notes are merely intended to be supplementary to his account. My survey notes agree almost exactly with Mr. Newton's though I feel doubtful about some of the walls marked on the E. half of the "Residence." The site is so much ruined that all but the external wall seems doubtful. For wall from S.E. and roof slabs, see pl. XLIX, 5, 6. I make the "Tomb" to be 37 ft. 6 ins. distant from the "Residence" and not approximately 64 ft. as scaled off from Newton's plan. The "enclosed sacred area for ritual purposes . . . on the north side" (*P.E.F. Ann.*, p. 17) is almost certainly the mouth of a large blocked-up cistern and Sir Flinders Petrie suggests that the upright stones were to keep sheep or goats away from the mouth of it.

109. EL MALFUF. OTHER RUINS. Site No. 6. This comprises a small ruined site with no visible traces of any tower or large building. Roughly, the site is 100 yds. in diam. commanding an excellent view down the wady. Pl. L, 9, general view, looking S.W.

Site No. 7. This is on the N. edge of the present road from 'Amman to Wady Sir. Though badly ruined, it appears to have been built on almost exactly the same plan as sites 2 and 5. There are two large empty cisterns to the north and a cave used as a stable to the east (pl. L, 10). Pottery was scarce.

110. SWEIFIYEH. Site No. 8 (Conder's *Surv. E. Pal.* Vol. I, p. 220). Sweifiyeh is a little over $\frac{1}{4}$ mile S. of the 'Amman-Wady Sir road and on the highest ground in the neighbourhood. It commands an excellent view over the W. Marba'at Musa for about two miles up and down stream (see map). The site is badly ruined, but in one place there are remains of large slabs such as are used for floors in sites 2 and 5. Most of the walls are made from an unusually small size of rubble, and there has been a great deal of Late Arab rebuilding to form pens for cattle and sheep. One of the large cisterns in the centre of the site is

still in use. At the S.W. corner is a large circular shaft leading to a cistern (pl. L, 11). The inside of it has originally been smoothed off with concrete and then plastered. The depth of the shaft from the present surface to the point where the roof of the cistern begins is about 15 ft. At one time the shaft appears to have been roofed over with large stone slabs, most of which have since collapsed.

111. SMALL TOWER. Site No. 9, on the wady. This tower stands alone with no adjoining buildings and has few features of interest. The diameter is 38 ft. and the wall approximately 5 ft. 6 ins. thick. It is composed of the usual roughly coursed rubble, the larger stones average 5 ft. \times 3 ft. 4 ins. \times 1 ft. and the smaller 2 ft. \times 1 ft. \times 9 ins. The tower has collapsed almost entirely inside and there are only a few blocks at the base of the wall outside. No pottery was found.

112. KHIRBET RONAK. Site No. 10 (Conder's *Surv. E. Pal.* Vol. I, p. 152. Nelson Glueck, *Bull. Amer. Sch. Or. Res.*, No. 68, p. 17). There is little of interest in this round tower which is nearly $1\frac{1}{2}$ miles E.N.E. of Khirbet es-Sar. To the S. lie fairly extensive but ruined walls which are possibly of later date than the tower itself. The tower is 62 ft. 6 ins. in diam. and the wall is 9 ft. 10 ins. thick and still stands to a height of over 8 ft. in places. It is noticeable that only a few fallen blocks can be seen; probably most have been carried away to erect modern houses. The size of one of the blocks of stone was taken as 66 \times 36 \times 18 ins.

113. KHIRBET ES-SAR. Site No. 11 (Conder's *Surv. E. Pal.* Vol. I, p. 153. H. C. Butler, *Anc. Architecture in Syria*, 11a, p. 33. Nelson Glueck, *B.A.S.O.R.*, 68, p. 17). These ruins, about a mile S.E. of the Circassian village of Wady Sir, command an extensive view to northward (pl. L, 14) and away to the Judaeian mountains and the plateau near the Derb el Haj. On a clear day the towers near Jerusalem are plainly visible. There are widespread remains of a settlement where pottery dating from Roman to mediaeval Arab times has been found by Dr. Glueck. Interest centres in the large square tower and its arcaded extension to the east.

The tower measures 64 ft. N.-S. by 66 ft. E.-W. and the walls are 9 ft. thick (13, looking E.). It is formed of huge blocks of chert limestone which have been given a minimum of dressing and appear to have been quarried from a surface outcrop. One stone measured 8 ft. \times 3 ft. \times 1 ft. 8 ins. and was by no means the largest. The eastern wall has been pulled down and only about 8 ft. remains standing at each end. The S.E. corner is shown in pl. L, 15.

114. KHIRBET ES-SAR. Site No. 12, arched building. The relation of the arcaded building to the tower can be seen from the sketch plan. The tops of the arches are about on the same level as that to which the east wall has been reduced (see pl. L, 16, 17, S. and N. windows or arcades, and 12, base of column blocking cistern). Seven arches on each can still be traced. Most of the "highly finished quadrated masonry" mentioned by Butler, which presumably formed the backing to the arches, has disappeared, nor did we see any of the sarcophagi under the arches. Rough rubble walls had been built to enclose a circular space under one arch. Mr. Kiralfy recovered some human bones from this—probably an intrusive Arab burial. The square tower is almost certainly of Iron Age, but excavation alone could solve the nature of the arcaded building. Sir Flinders Petrie suggests it is an early Christian church. Dr. C. S. Fisher thinks it might be a large family tomb. If Butler's sketch plan is correct in showing a solid masonry backing to the outer faces of the arches, the building should be a series of tombs.

115. CONCLUSIONS. The manner of building employed on the Malfuf constructions of Trans-Jordan gives no guide as to date. The use of huge blocks of stone, which is sometimes characteristic of an archaic civilisation, is found in all ages down to Roman times in Trans-Jordan. There remains the pottery "which has previously been either ignored, not found, or not recognised" (Nelson Glueck, *B.A.S.O.R.*, 68, p. 18). We collected sherds from all the sites except No. 9 where none could be found. According to Dr. C. S. Fisher the great majority was Early Iron, and this is in agreement with Dr. Glueck's conclusions.

Site No. 6 had the usual Early Iron and some Roman. The square court to the round tower at Malfuf (No. 3) had nearly all Roman sherds. In the tower itself we could not find any pottery. Site No. 7 had only very Late Roman. Late Byzantine and Arab pottery and fragments of glass bangles were found at Khirbet es-Sar (No. 11) and Umm Sweiwina (No. 1). Unless otherwise stated, Early Iron pottery was found at all the sites.

Analogies with similar buildings, more especially in the case of the round towers, seem to be of little value. The Scottish broch is entirely different in plan and bears no resemblance to the Malfuf towers or the Nuraghi of Sardinia (A. O. Curle, *Antiquity*, Vol. 1, p. 295). Dr. Glueck agrees with Dr. Mackenzie's theory that the towers are so placed as to guard the wady approaches to the fertile lands of

'Amman. On analogy with the peel forts of the Scottish and English border, the Malfuf towers are placed much too closely together. For example, sites Nos. 3, 4, 5, 6, and 7 all occur within the space of $1\frac{1}{4}$ miles. The round tower (No. 3) would have given ample protection to the people who tilled these lands and also to their flocks. From the ruined stone walling we may infer that small farming settlements sprang up in the protection of some of the towers, such as Kh. Ronak, site No. 10 (see pl. XLIX, 7 and 8, tower, looking south, and view from inside). It is obvious that the round tower at No. 3 was specially built to guard the upper valley of the Wady Sufrah, while the smaller tower at No. 4 commanded the upper valley of the Wady el Malfuf and the plateau between sites Nos. 7 and 8. Incidentally, since No. 4 is an outpost dependent on No. 3, this should give evidence as to the original height of the buildings. At present, due to the ruined condition of both, Nos. 3 and 4 are no longer visible from each other, though originally they must have been so.

As regards the general strategic scheme, it is best to quote Dr. Mackenzie's excellent summary: "We have thus to do with a system of fortification arranged with a view to the strategic function of the units composing it in relation to points of vantage, themselves dependent on the peculiar lie of tableland and valley, characteristic of the environments of Rabbath Ammon. It is evident that the whole position and system of these fortified buildings was consciously sought out with a view to their peculiar function of defensive outlook. It is a sort of blockhouse system, having relation to the whole exceptional character of Ammon similar to that which, as pointed out by Nissardi, and after him by others, is characteristic of the nuraghe system of all Sardinia. Strategic considerations of this kind, consciously thought out and put into practice, presuppose in turn long previous experience." (*P.E.F. Ann.*, 1911, pp. 18, 19, 25, 26.)

By using a prismatic compass to fix the positions of some of the sites which are not marked on the 1:50,000 Government map, I tried to work out the question of the mutual visibility between the different towers. The results are shown graphically on the map of the sites. It should be noted that from Sweifiyeh (No. 8) one could probably see both Nos. 1 and 2. Unfortunately no angles were taken from Sweifiyeh to the eastern sites (which we had not then visited) and from Nos. 1 and 2 it was impossible to pick out with field glasses the low ruins of Sweifiyeh. The watershed between the fortresses Nos. 9, 10, 11,

and the E. group 3, 4, 5, 6, and 7 obviously interposes a barrier between the two groups; but a glance at the map shows that Khirbet es-Sar could exchange signals either through sites Nos. 1 or 2, even if Sweifiyeh could not do so directly. Flare signals at night could easily be seen for at least 12 miles.

It would be interesting to work out the whole system and see if it applies to the sites on the plain toward Jerash as well. The mere fact that such an elaborate defence was necessary agrees well with the assigned Early Iron Age of the towers (Glueck, *B.A.S.O.R.*, 68, p. 17). Dr. Glueck has found evidence of similar strategic placing of forts on the E. boundary of Edom (*B.A.S.O.R.*, 65, p. 23. *Ann. A.S.O.R.* Vol. 15, pp. 138-139).

As regards the original appearance of the circular forts, it is doubtful whether such a huge tower as No. 3 ($66\frac{1}{2}$ ft. in diam.) would be able to support a beehive corbelled vault on walls only 7 ft. thick at the base. If no large quantity of stone has been removed from the site, it can never have been very tall. It must have been originally plastered with mud and given an external coat of mortar (compare Doughty's description of the Kella on the Haj route, *Arabia Deserta*. Vol. 1, p. 94). Otherwise it could be swarmed with the greatest ease.

A study of Mr. Newton's plan (*P.E.F.A.*, 1911, pl. IV) makes one doubt whether the square building is not an addition to the circular tower. Dr. Mackenzie's theory as to the original "entrance from the north along the avenue between walls on either hand" (*P.E.F.A.*, 1911, p. 24) would be invalidated if the entrance were raised up one storey from the ground. Judging from the other round towers, which show no trace of any doorway at ground level, the entrance was probably at least 10 ft. up and reached by a ladder. There are no remains of any stone staircase either external or internal.

Though Mr. O. G. S. Crawford agrees with Dr. Mackenzie that the detached square building to S.E. of site No. 5, Malfuf, "was doubtless the tomb of some chief who lived there, or possibly a communal burying place of the inhabitants" (*Antiquity*, 3, p. 342), the fact that the system of construction is identical with that of the rooms grouped round the tower tends to disprove this view. The most obvious use for the lower buildings adjoining the square towers is as a store-house. Site No. 2, el Hemraniyeh, is of similar type. It was noticeable that in all the sites there were several caves or cisterns, and it seems probable that before the building of the forts these were occupied by cave-dwellers.

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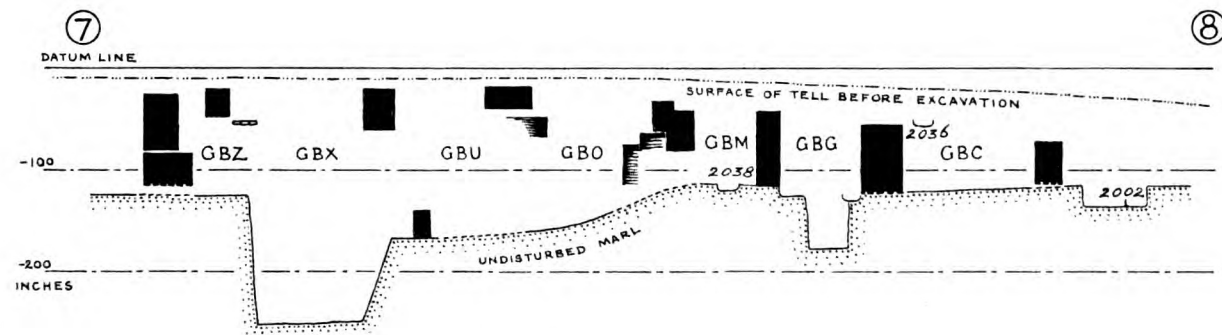
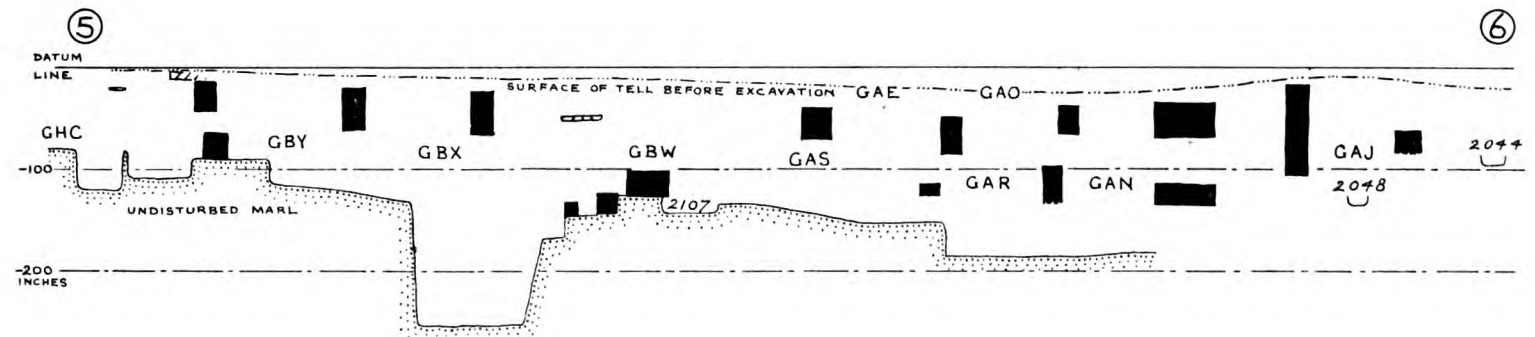
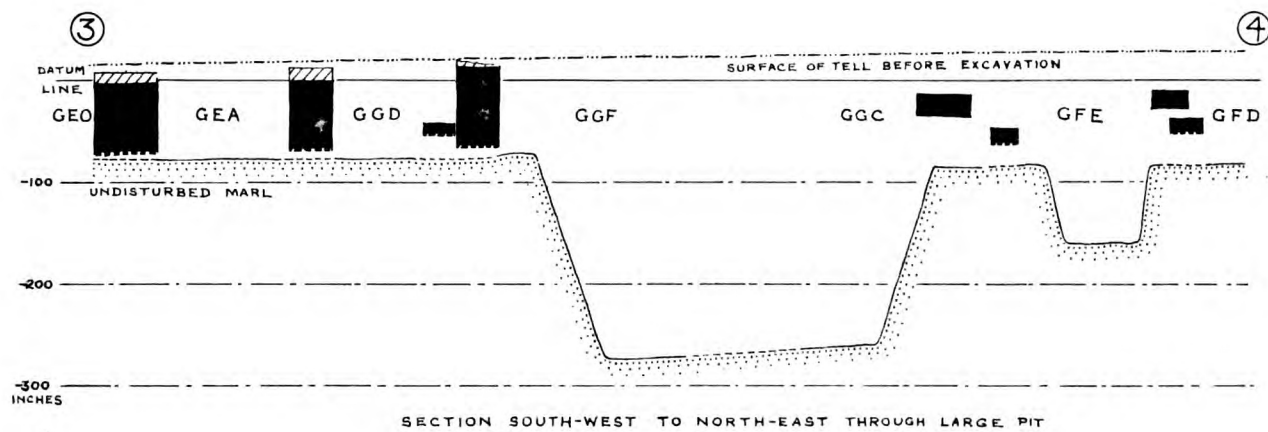
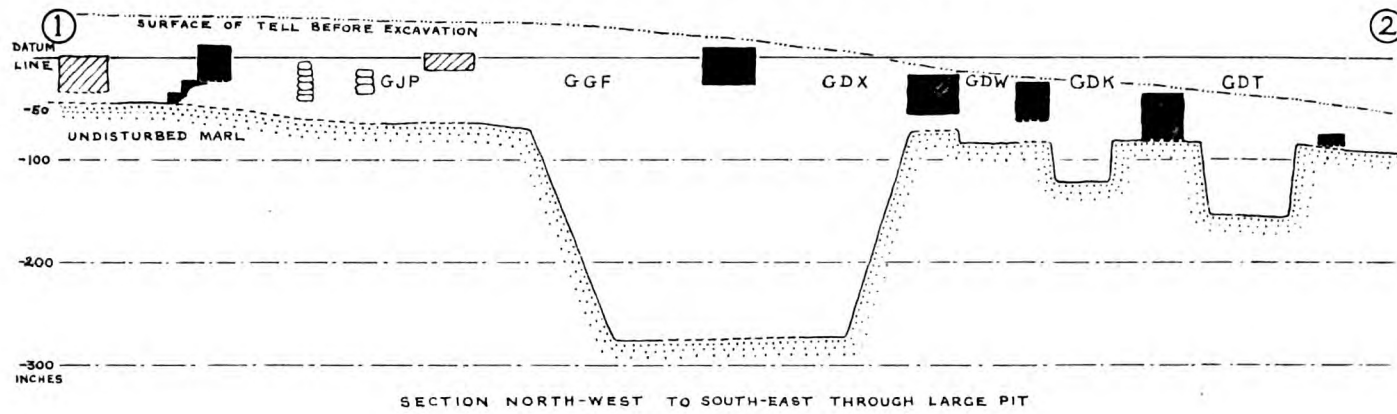


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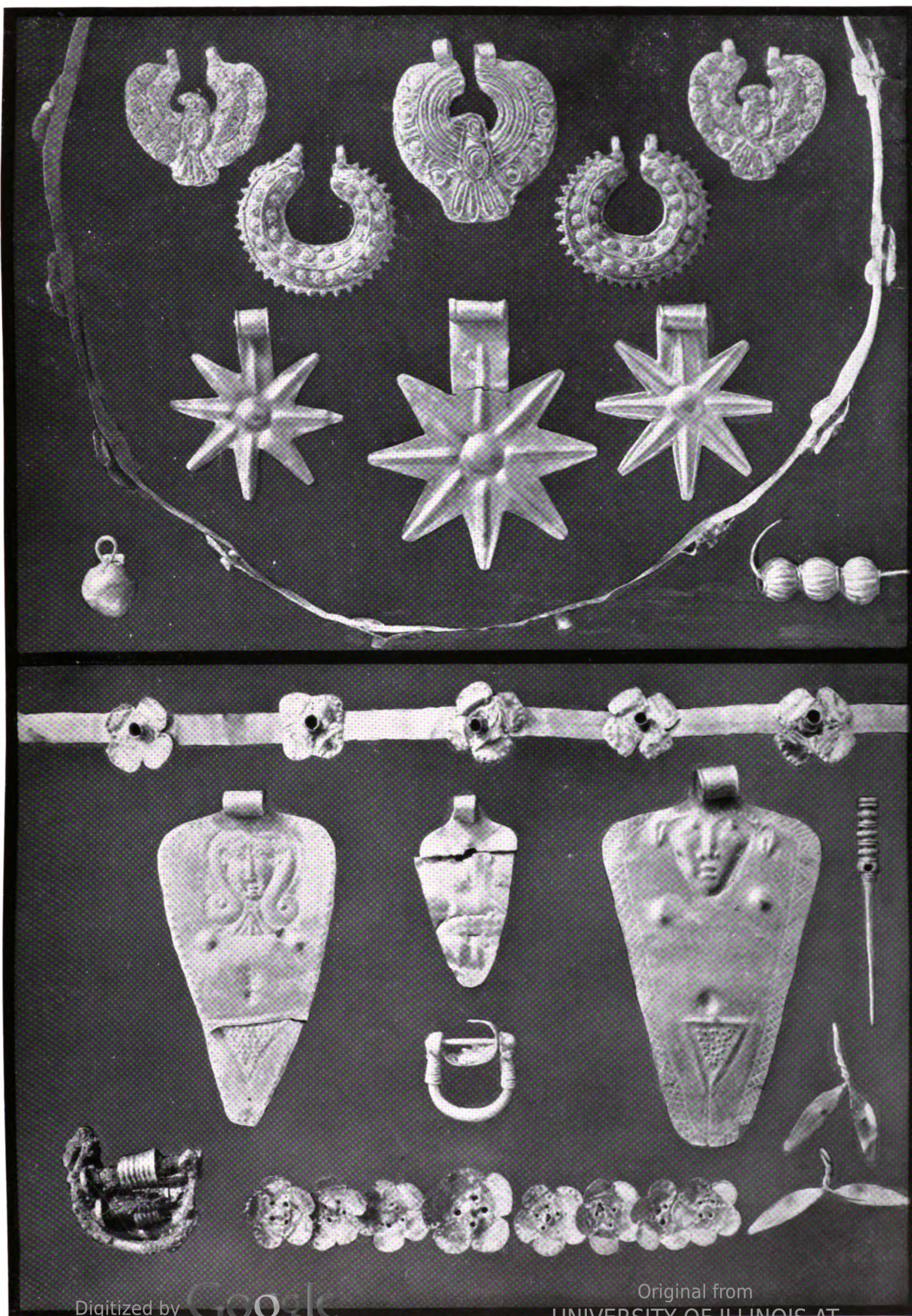
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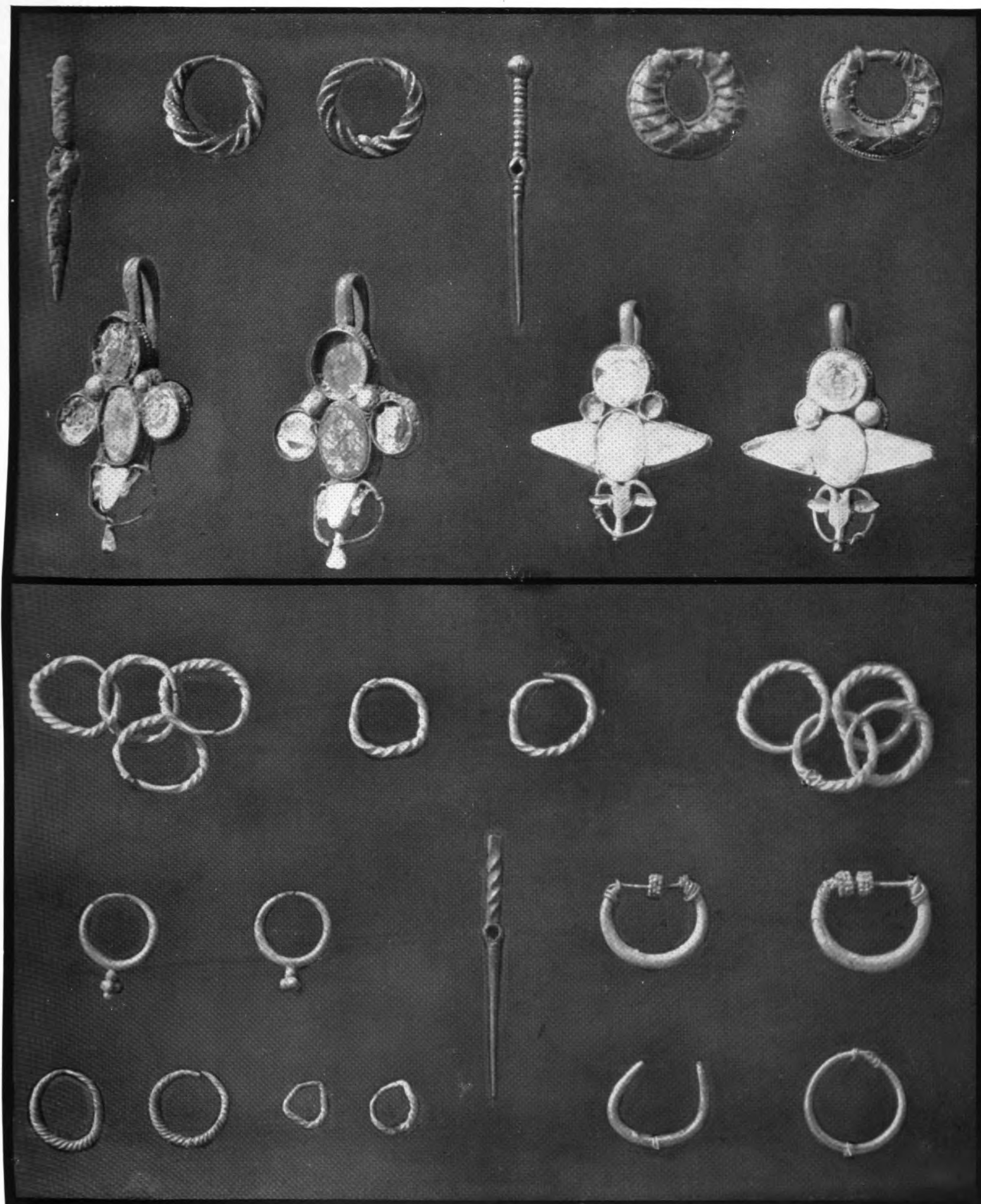
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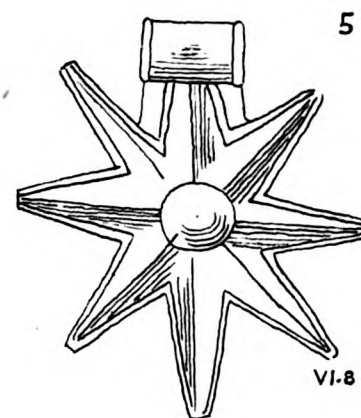
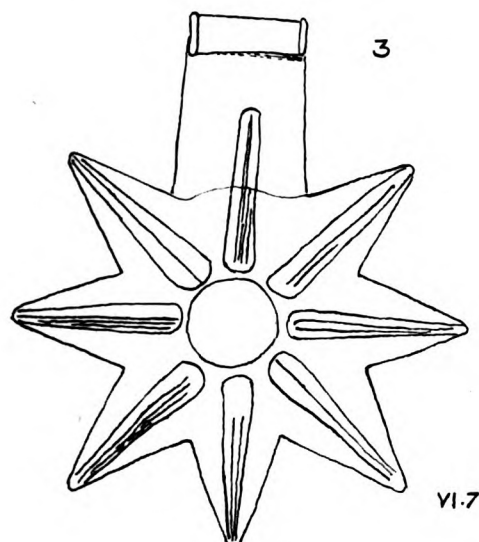
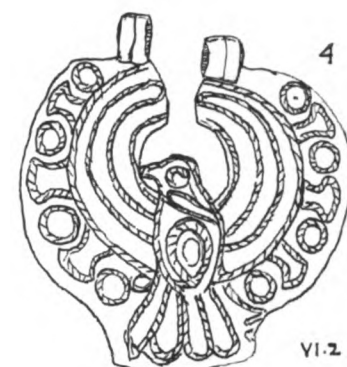
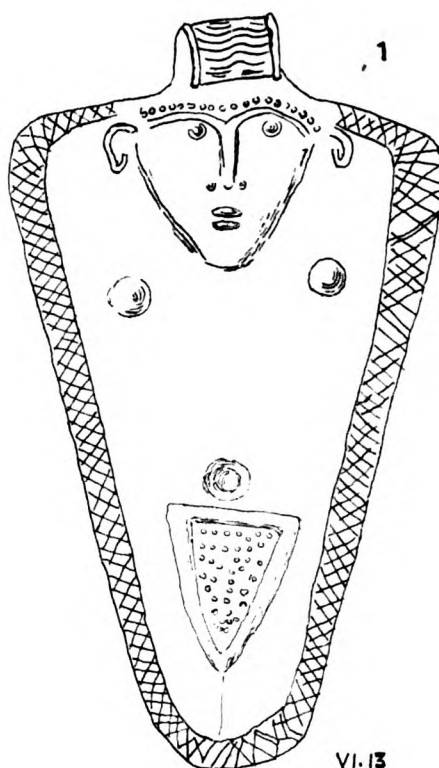
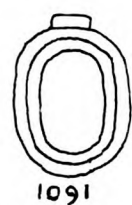
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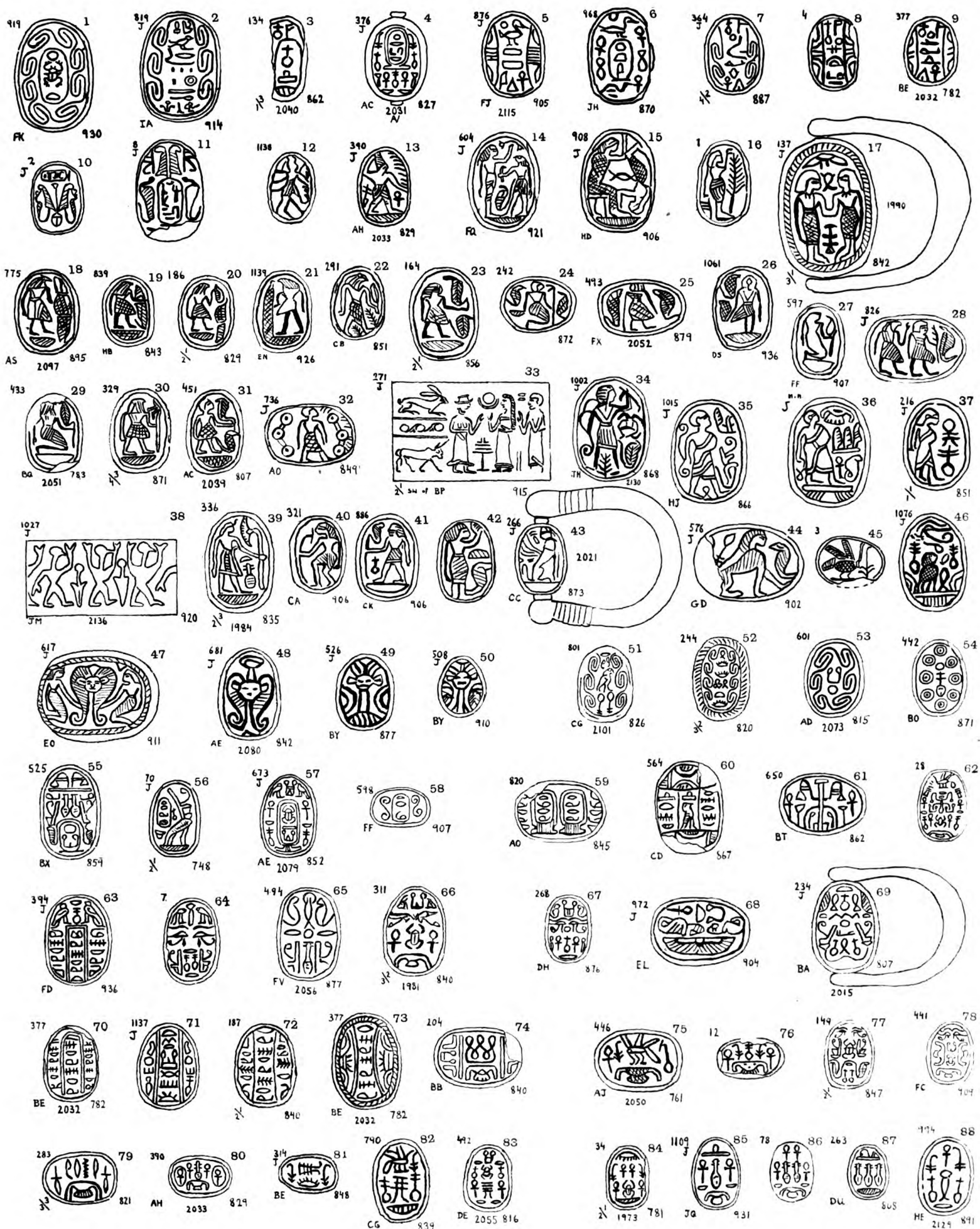
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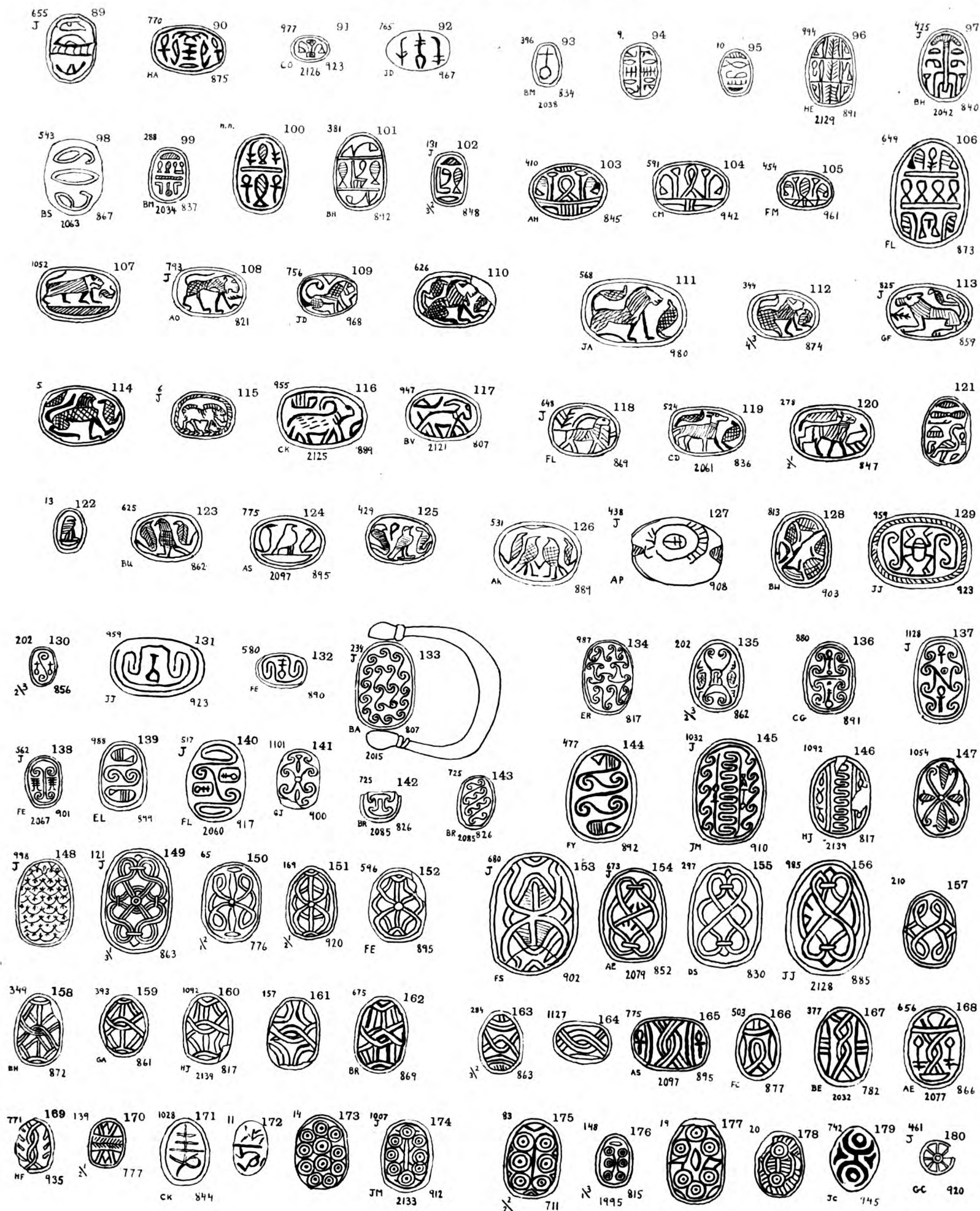


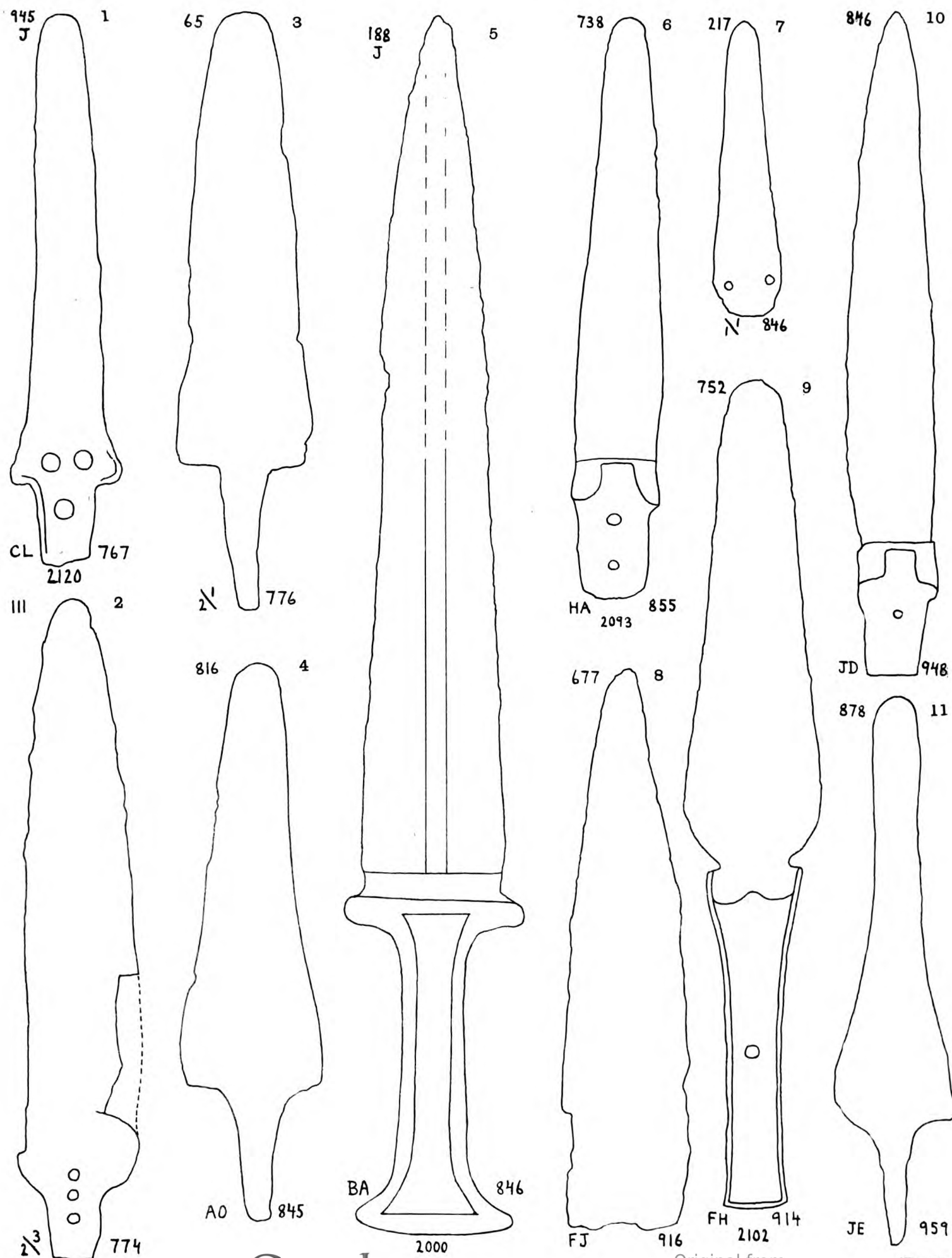


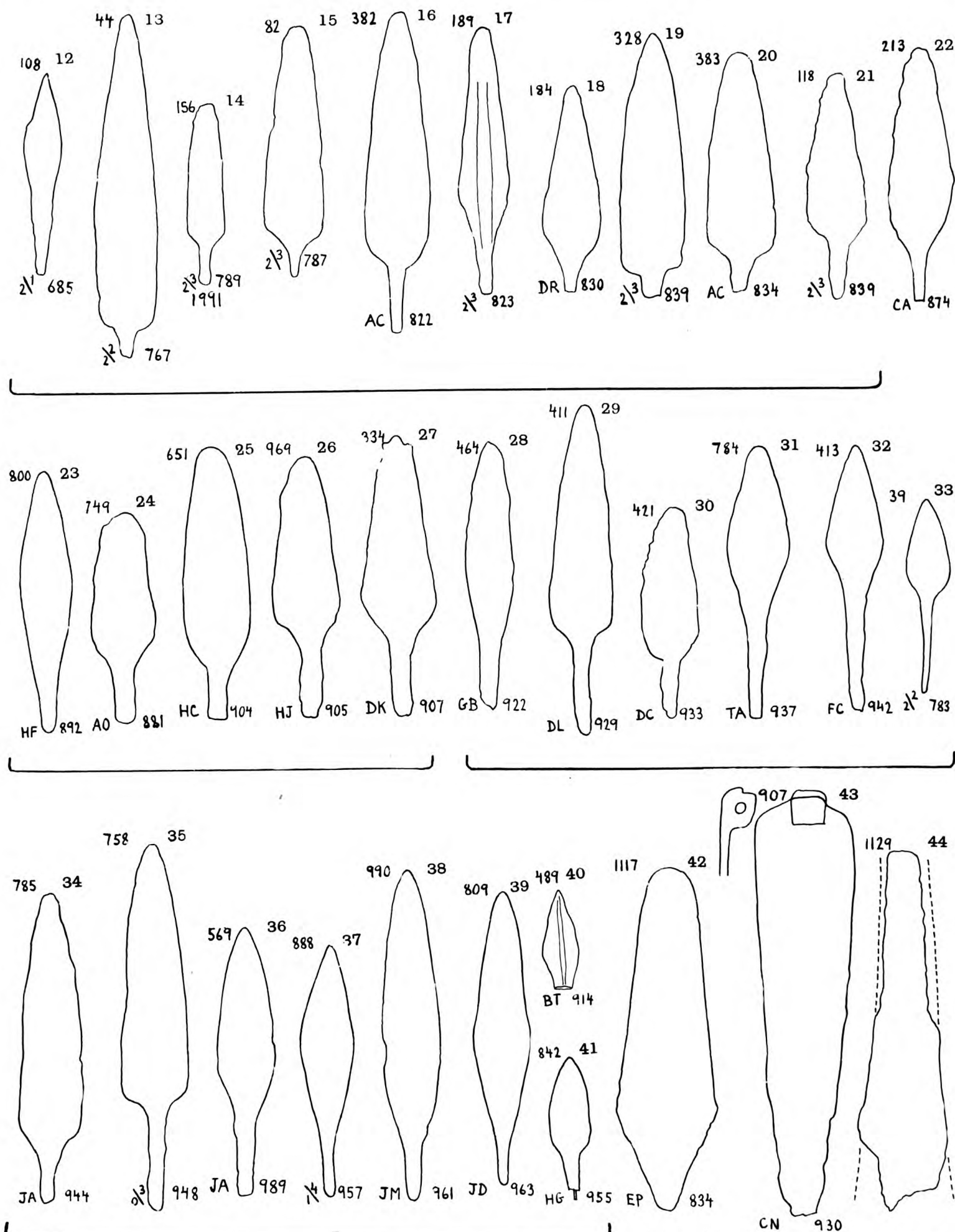


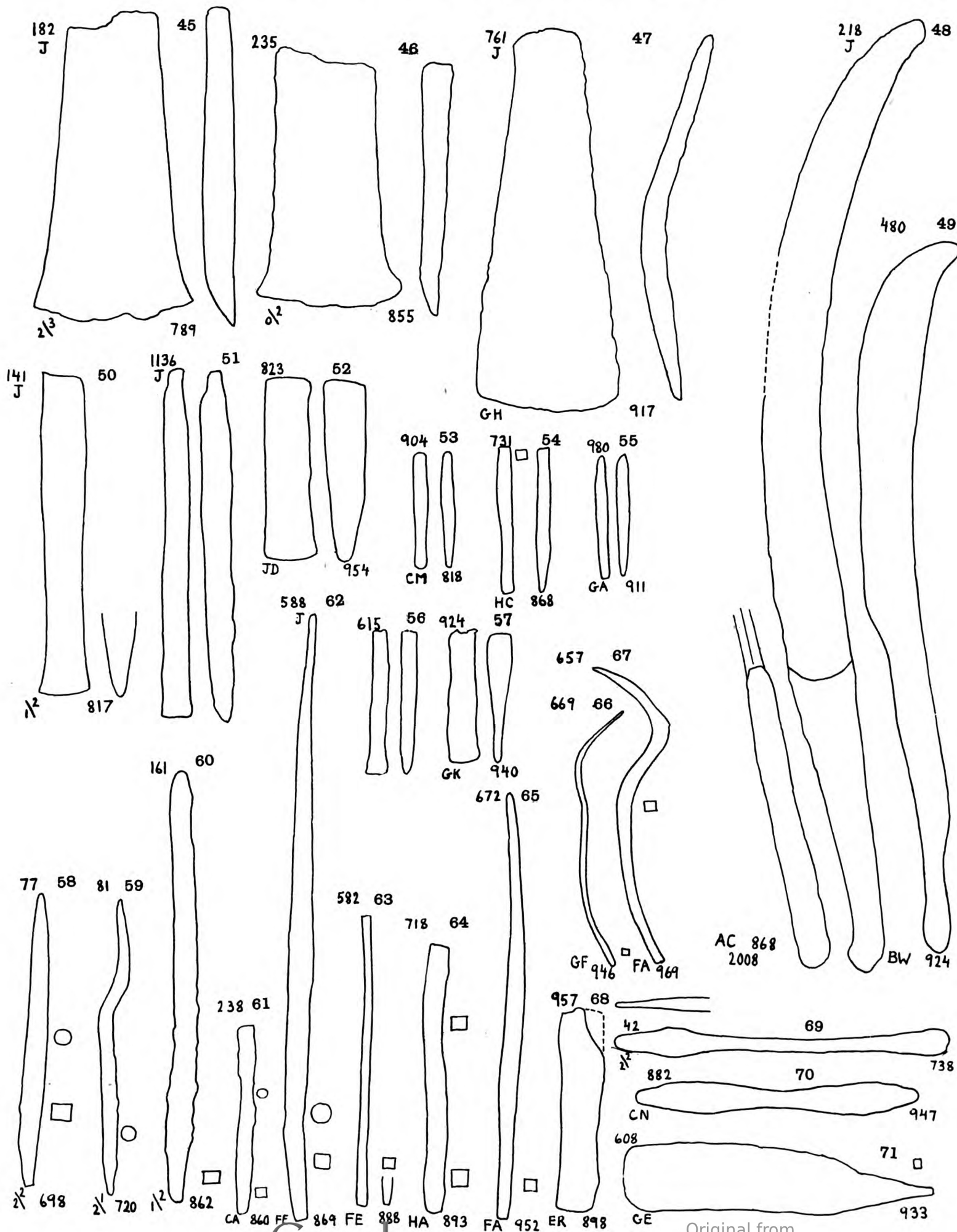
	STANDARDS OF WEIGHT OF GOLD-WORK					
	DARIC	QEDET	NECEF	KHOIRINE	BEQA	SELA
MOTHER GODDESS	V. VI. 12 126.0 126.0 IV. XIV. 9 92.2 $\frac{3}{4}$ 126.9	V. VI. 13 219.8 $\frac{1}{2}$ 146.5 IV. XIV. 8 298.6 2 149.3				
STAR	IV. XVIII. 112 62.6 $\frac{1}{2}$ 125.2	V. VI. 6 67.5 $\frac{1}{2}$ 135.0 IV. XIV. 14 138.2 138.2 IV. XIV. 15 143.0 143.0			V. VI. 7 105.5 $\frac{1}{2}$ 211.0	V. VI. 8 112.0 $\frac{1}{2}$ 224.0
GRANULAR	V. VI. 2 126.0 126.0	IV. XIV. 26 69.0 $\frac{1}{2}$ 138.0 IV. XIV. 27 73.0 $\frac{1}{2}$ 146.0 IV. XX. 132 150.0 150.0 IV. XX. 133 154.0 154.0 IV. XVI. 67 153.0 153.0		V. VI. 1 88.0 $\frac{1}{2}$ 176.0 V. VI. 3 83.7 $\frac{1}{2}$ 167.4 V. VII. $\left\{ \begin{smallmatrix} 23 \\ 24 \end{smallmatrix} \right.$ 185.5 185.5 IV. XIV. $\left\{ \begin{smallmatrix} 28 \\ 29 \end{smallmatrix} \right.$ 185.0 185.0 IV. XVI. $\left\{ \begin{smallmatrix} 51 \\ 52 \end{smallmatrix} \right.$ 176.0 176.0	IV. XIV. 30 100.0 $\frac{1}{2}$ 200.0 IV. XIV. 31 105.0 $\frac{1}{2}$ 210.0 IV. XVIII. 90 105.2 $\frac{1}{2}$ 210.4	V. VI. 4 221.2 221.2 V. VI. 5. 225.6 225.6
TOGGLE- PINS	IV. XIV. 21 42.3 $\frac{1}{4}$ 126.9 IV. XIV. 23 64.6 $\frac{1}{2}$ 129.2 IV. XVIII. 98 43.5 $\frac{1}{4}$ 130.5	V. VI. 16 70.6 $\frac{1}{2}$ 141.2 V. VII. 26 149.5 149.5 IV. XVIII. 111 151.4 151.4 IV. XX. 138 149.5 149.5	IV. XVIII. 110 78.3 $\frac{1}{2}$ 156.6	V. VII. 35 42.3 $\frac{1}{4}$ 169.2 IV. XVIII. 123 86.26 $\frac{1}{2}$ 172.52		



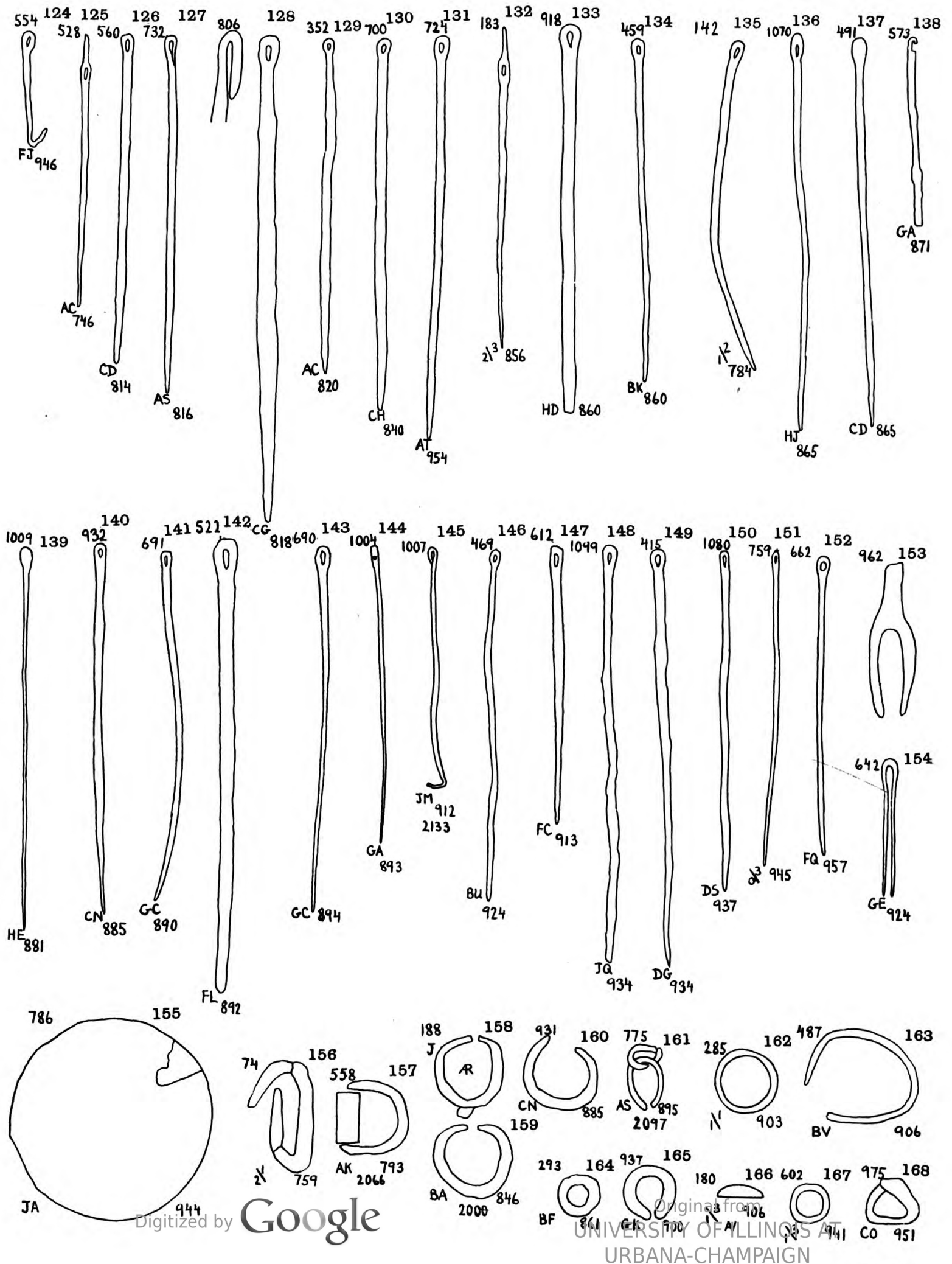


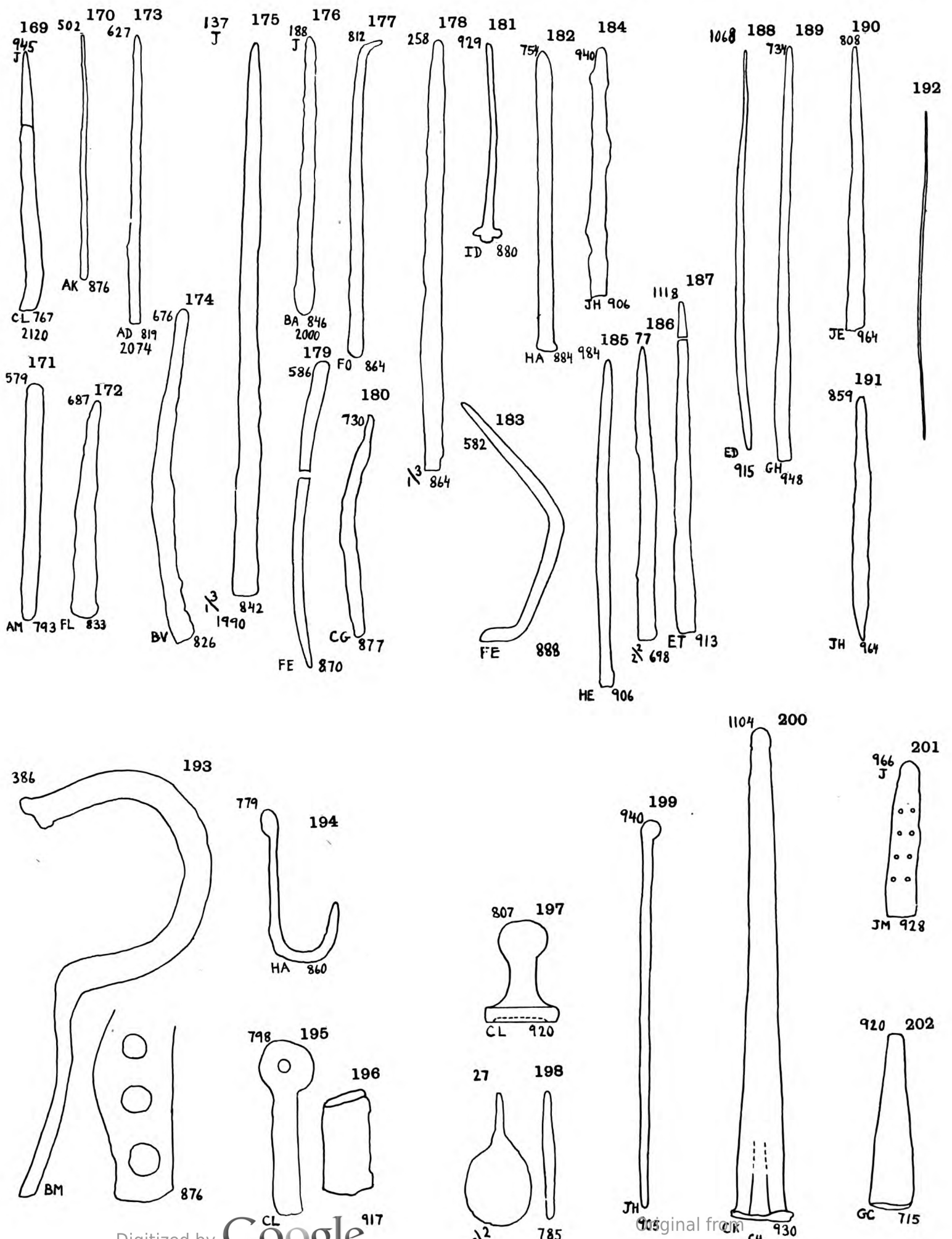


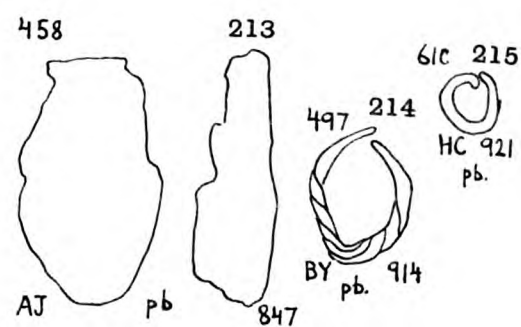
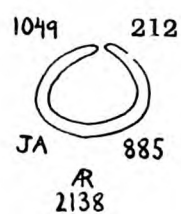
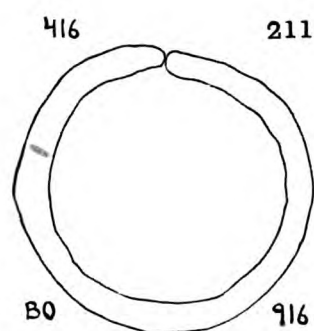
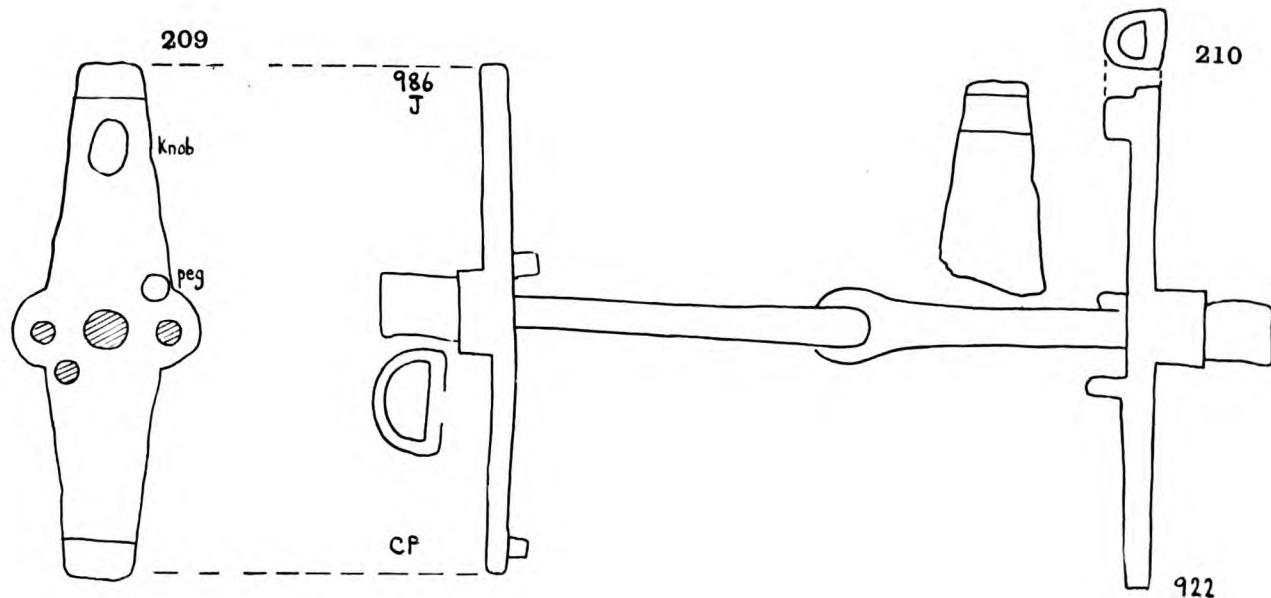
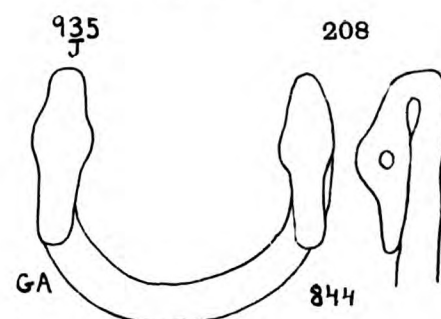
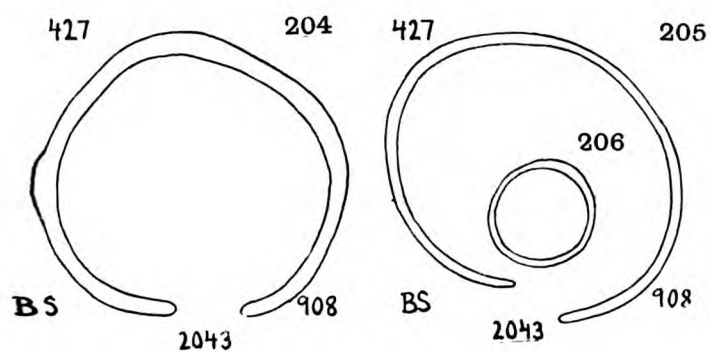
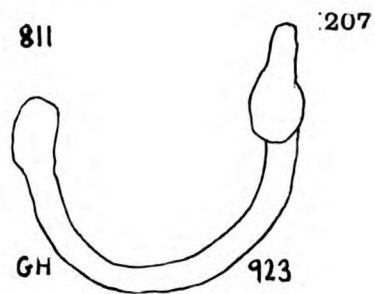
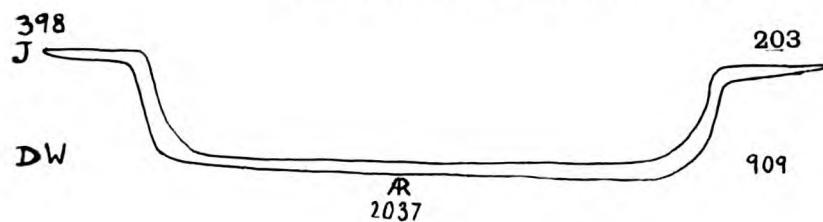












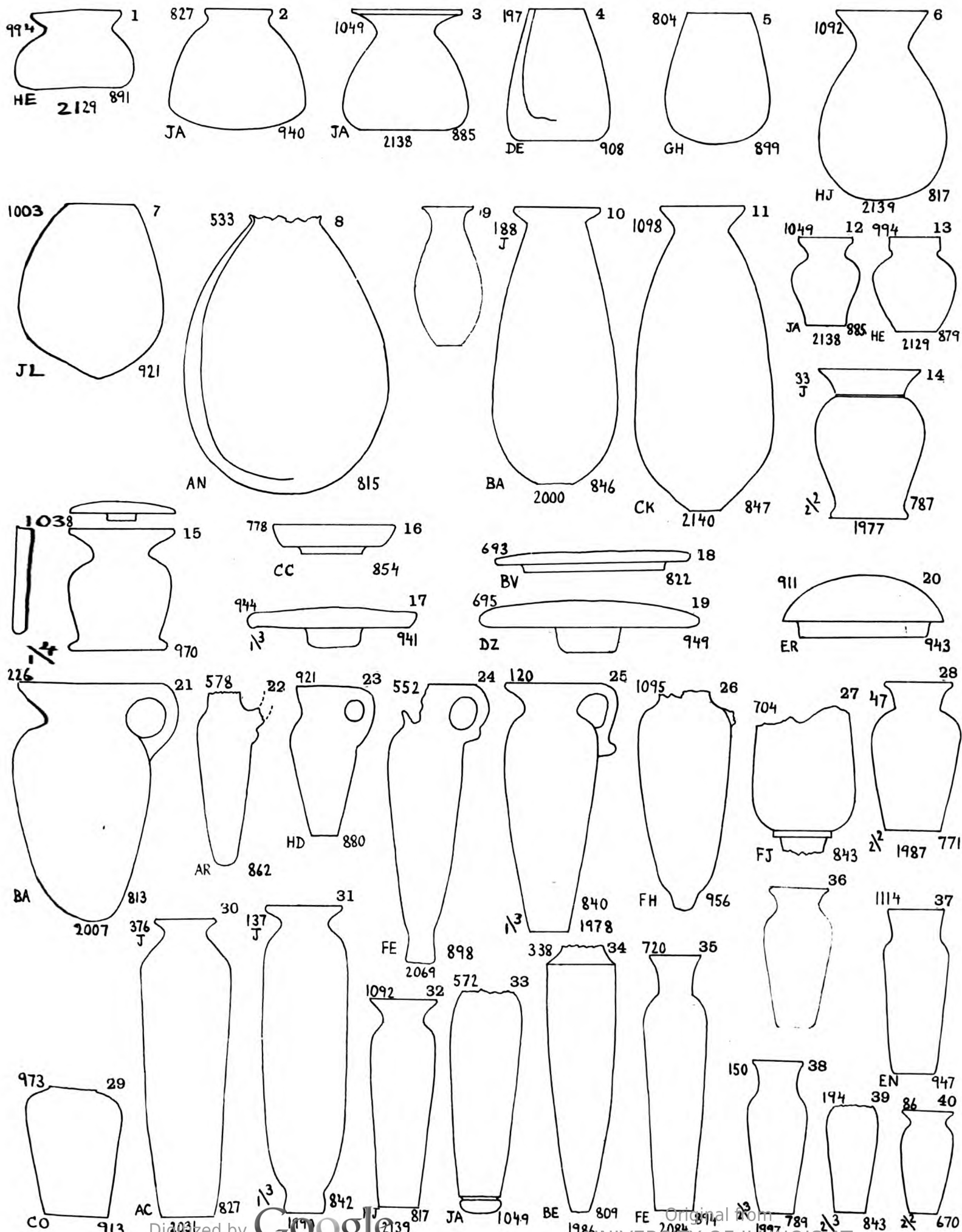
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GAZA. STONE VASES 1-16. ALABASTER 17-40

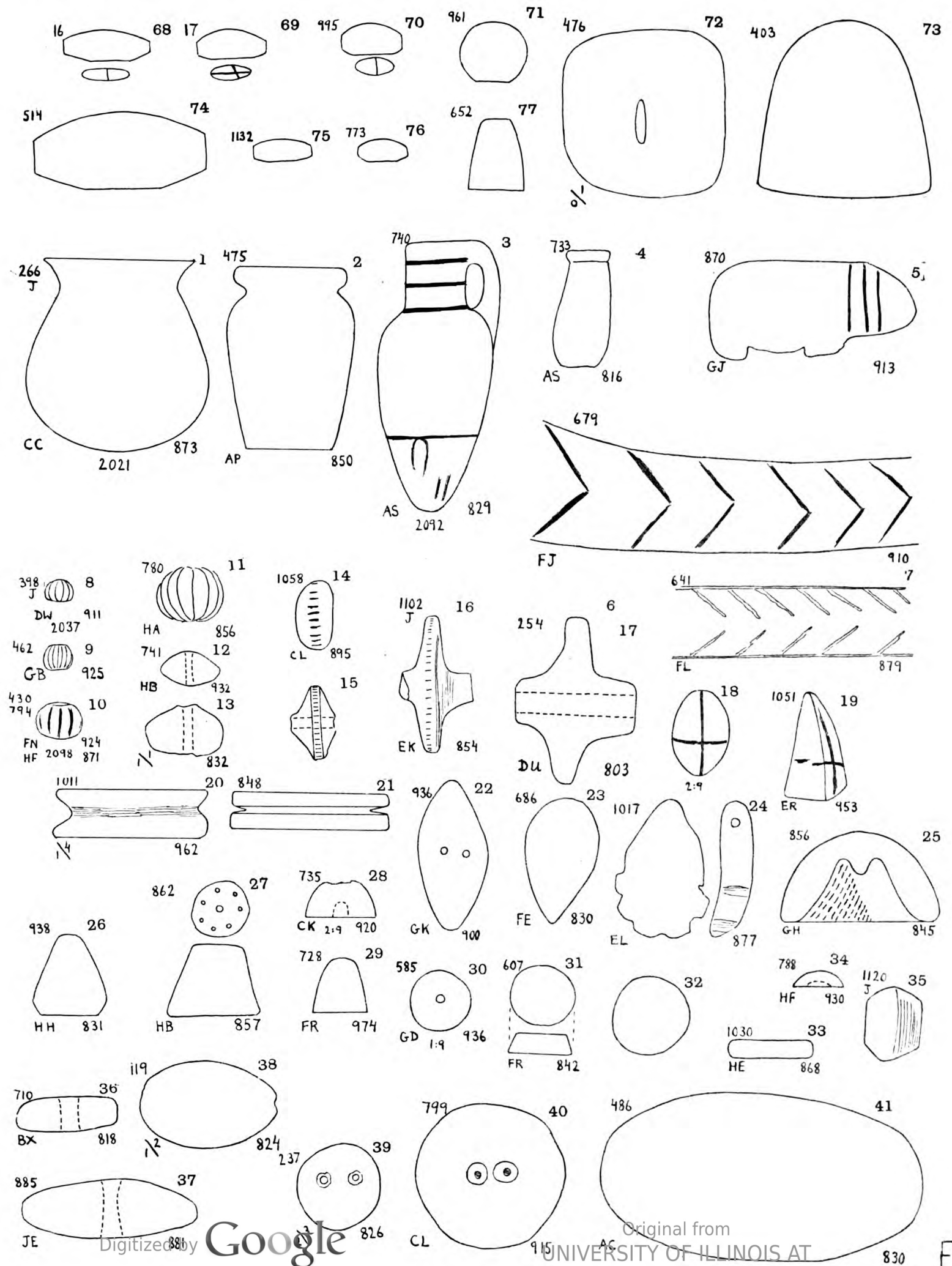
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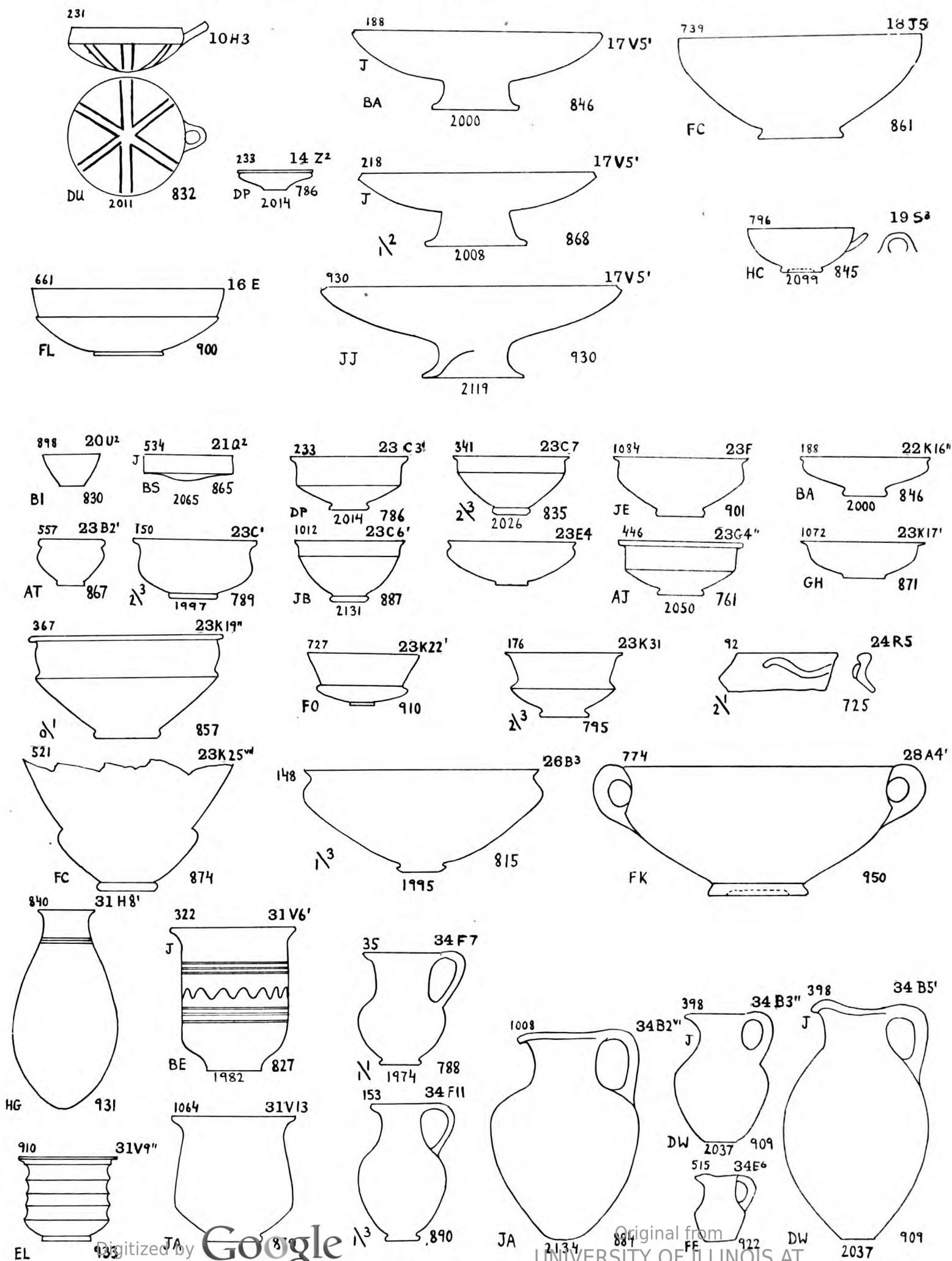


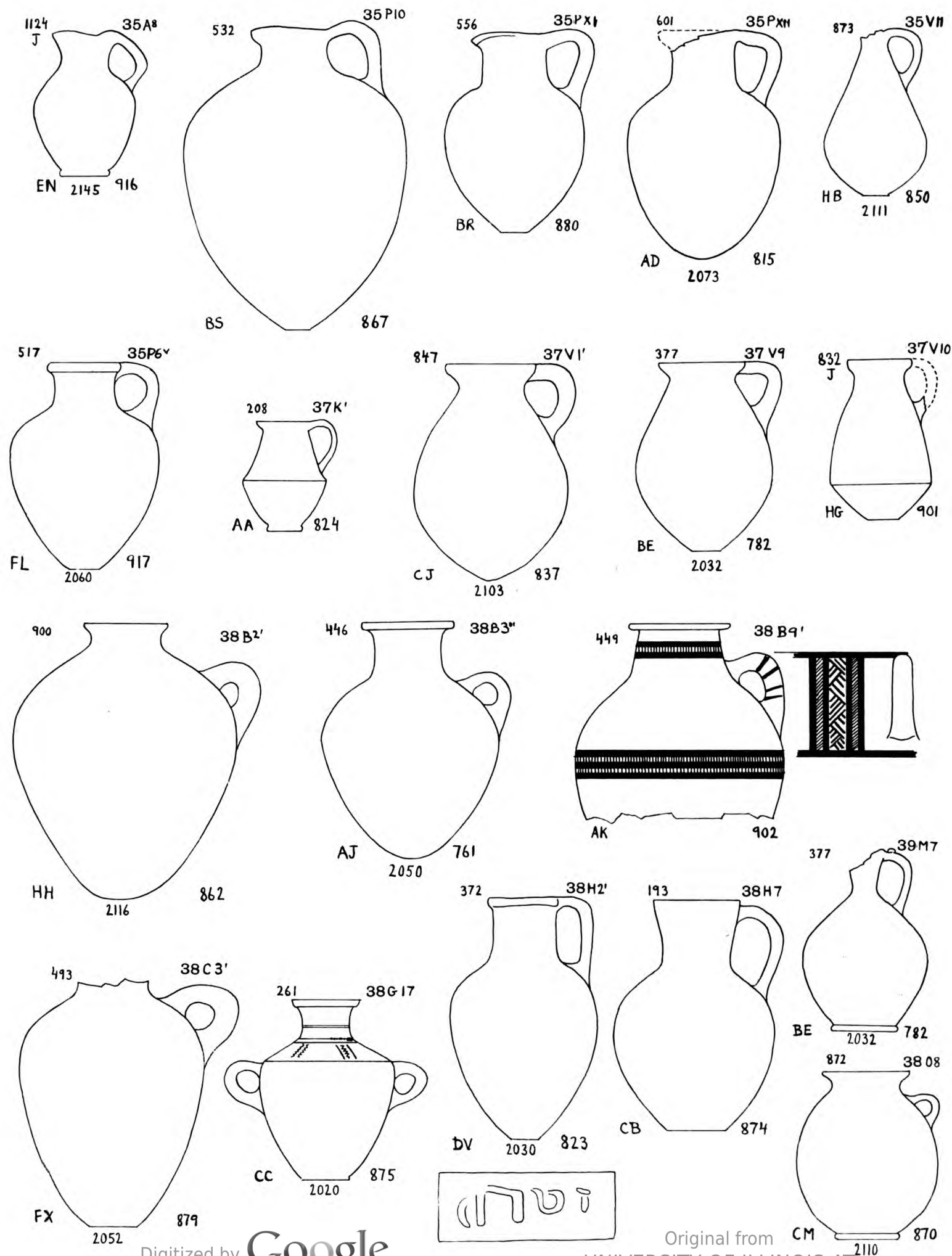


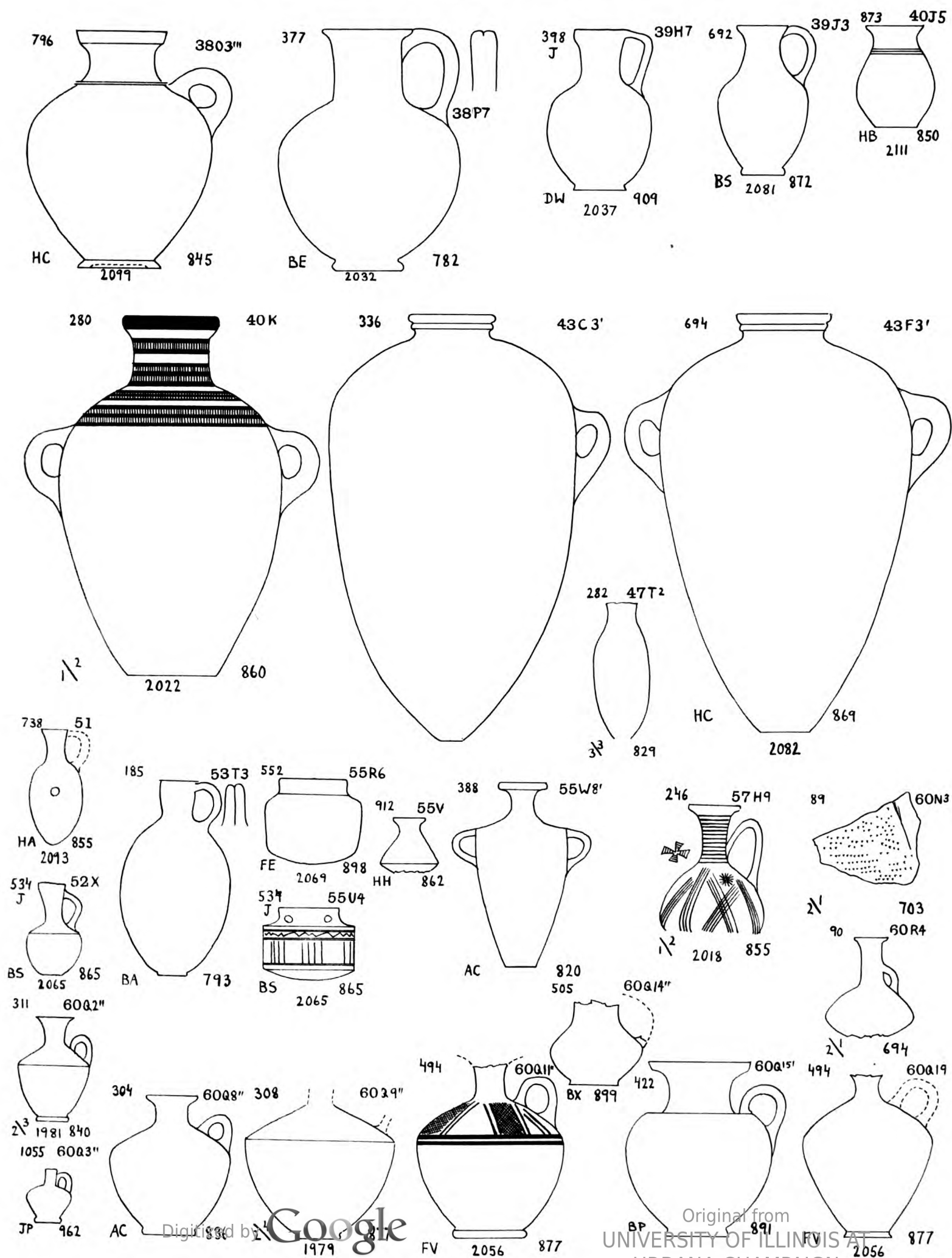
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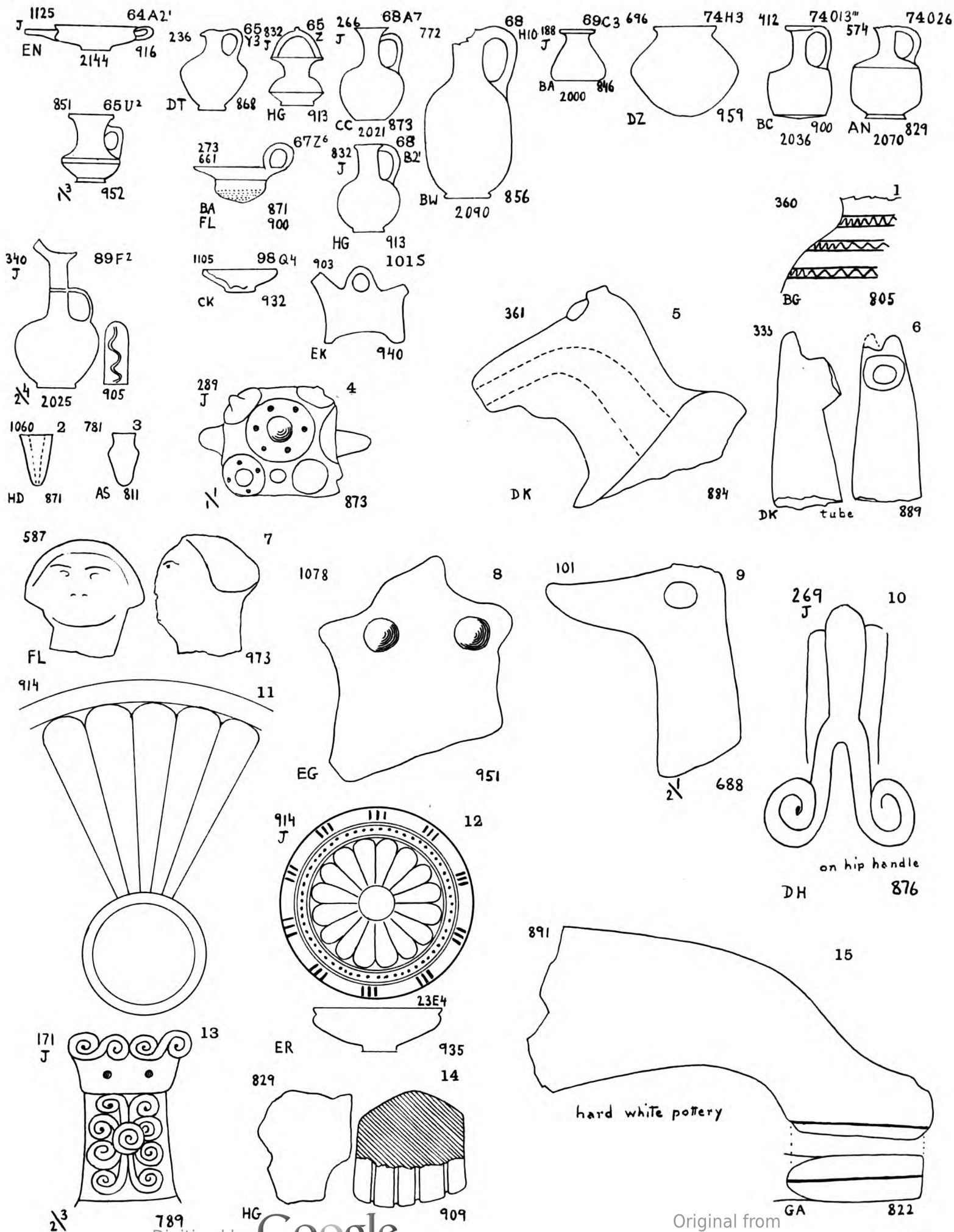


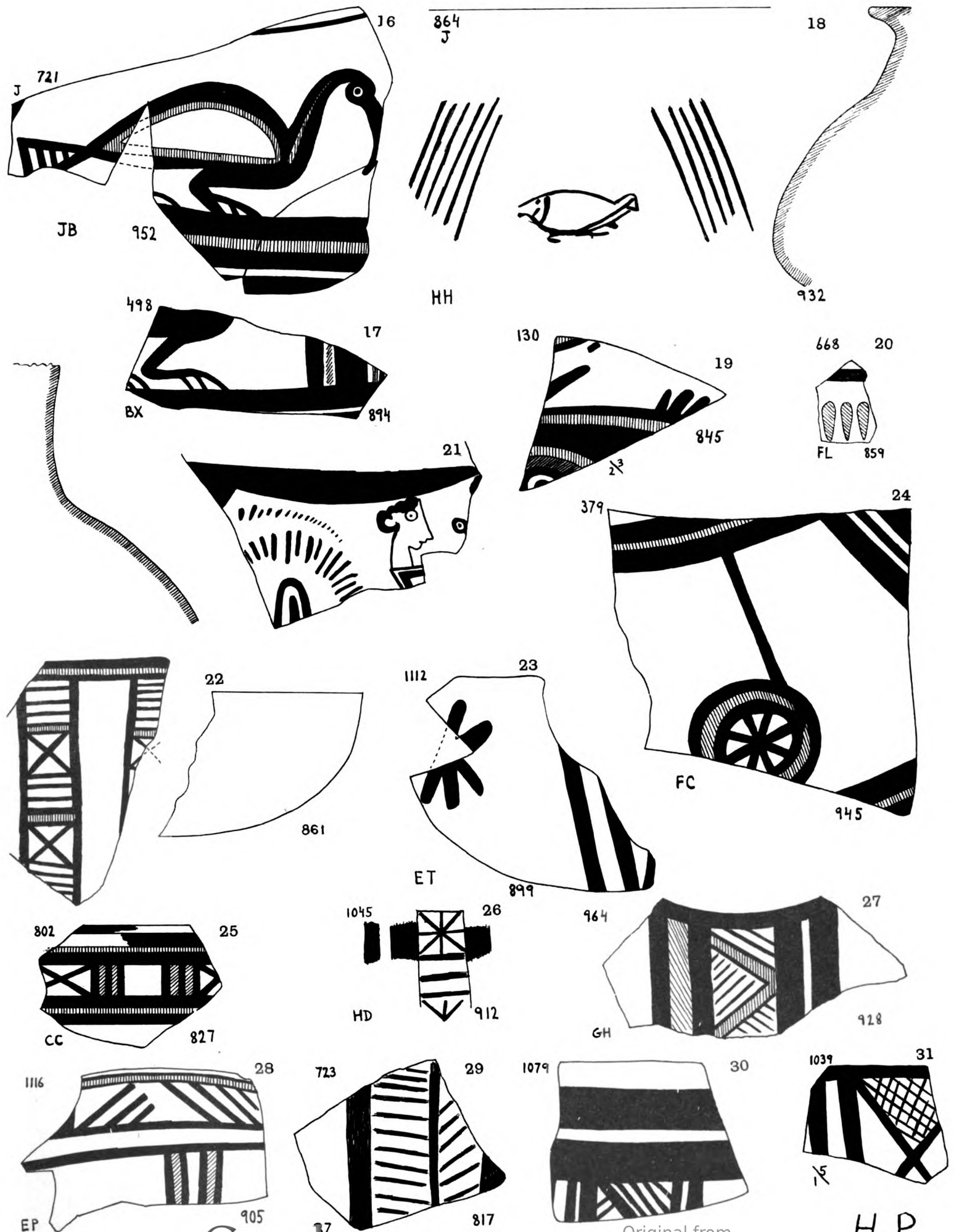


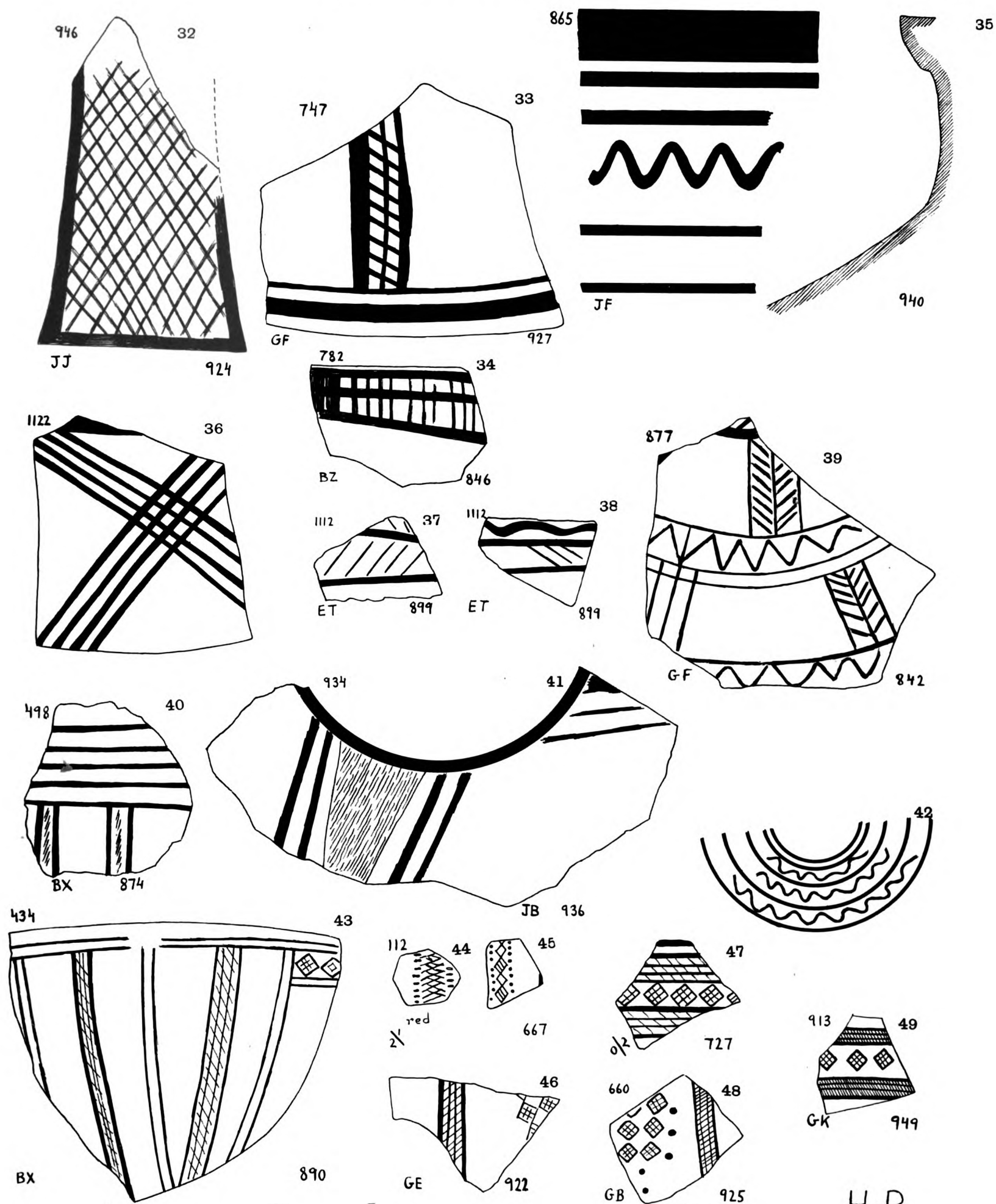
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GAZA. POTTERY, NEW FORMS, 64-101. VARIOUS 1-15

XXVIII







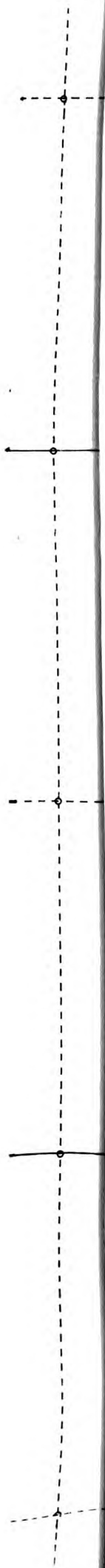
GAZA. MEASUREMENTS OF SKULLS

XXXI

♂	L	W	WF	H	BIZ	BAL	NAS BAS	NAS ALV	NAS DEN	NAS MEN	NAS H	NAS W	O R B I T S IN PUP	O R B I T S OUT	J A W W CON	SUM	
1501	200	142	100	139	—	94	102	72	82	—	50	28	24	64	103	— —	481
PAL2	200	—	92	—	—	—	—	73	81	—	55	24	20	57	94	— —	—
1499	197	149	—	—	—	—	—	82	91	133	55	25	—	—	—	104 134	—
1715	195	136	101	138	142	102	116	74	86	—	58	28	25	63	103	— —	469
462	195	130	91	—	—	—	—	70	82	124	54	26	21	61	100	— —	—
458	191	135	93	137	128	99	111	95	86	—	48	20	23	56	89	91 —	463
1480	190	169	123	—	—	98	—	—	—	—	50	26	—	—	—	110 120	—
PN	186	136	—	127	125	97	100	73	—	—	54	23	22	56	90	91 —	449
	187	140	—	136	122	—	—	—	—	—	67	22	24	58	92	92 —	463
1467	185	142	100	143	125	90	98	76	84	127	—	—	25	62	100	110 120	476
1214	183	140	89	125	122	97	96	66	75	109	—	—	21	57	93	— —	448
303B	183	145	—	138	124	91	—	—	—	—	—	—	22	58	95	94 95	438
1755	182	154	102	—	143	—	—	72	80	125	52	26	19	60	101	94 126	—
PN	182	135	90	132	125	96	100	72	69	117	47	25	25	57	92	99 119	449
	181	124	—	—	—	—	—	57	73	73	—	—	—	—	—	80 —	—
1718	179	151	98	139	—	100	106	76	84	—	55	26	18	59	100	107 120	469
1231	178	141	97	136	135	94	99	67	74	—	51	27	21	59	97	97 —	455
3322	178	135	—	145	—	—	—	78	—	—	—	—	—	—	—	— —	458
303	178	141	96	130	128	95	102	60	—	—	45	24	20	58	96	— —	449
1719	177	—	88	—	—	—	—	63	72	—	—	20	—	—	—	— —	—
1335	175	—	93	130	—	91	106	64	—	—	50	22	—	—	—	91 —	—
1700	174	134	92	125	123	92	96	66	71	110	47	23	24	59	95	90 —	434
1497	170	139	89	137	120	87	100	73	79	120	51	21	17	55	94	100 115	446
1480	169	123	—	—	—	98	—	—	—	—	—	—	—	—	—	91 —	—
	183	140	95	136	125	95.5	101	72	80	120	51.5	24.5	22	59	95	94 120	456

♀																	
1235	194	126	109	146	147	103	107	70	80	—	50	25	21	52	83	—	466
1344	187	139	95	143	130	98	102	75	85	122	50	26	22	61	100	92	469
1549	183	131	94	—	—	—	—	65	74	—	45	21	20	56	91	85	—
1345	183	—	93	140	132	94	103	73	80	—	51	23	18	53	99	109	—
1781	181	—	—	—	—	—	—	72	79	—	54	23	—	—	—	81	—
1716	180	131	91	—	—	—	—	66	76	—	52	26	20	58	97	100	—
1715	178	137	89	136	—	75	97	72	—	—	—	—	—	—	—	118	451
	178	151	99	137	—	92	102	71	84	—	53	25	19	60	100	—	466
1302	178	129	—	124	123	90	99	65	—	—	48	23	20	58	96	—	431
419	177	122	85	—	—	—	—	60	68	—	42	—	15	48	81	—	—
	177	130	91	136	123	92	98	68	76	—	47	27	19	56	93	—	443
	177	127	—	—	113	—	—	65	73	109	48	23	19	55	91	—	—
1553	176	124	93	—	117	—	—	73	81	114	49	23	17	56	95	87	108
1500	176	132	96	117	124	89	85	64	72	107	47	27	22	58	95	—	425
1735	175	140	93	119	109	80	87	55	65	95	41	22	19	52	85	88	434
1304	174	138	99	130	—	85	95	69	77	113	53	—	17	54	91	83	442
1754	174	132	—	—	—	99	113	67	77	—	48	26	22	67	112	94	—
1302	173	132	96	130	121	—	—	68	80	—	—	—	20	58	96	—	435
x7	172	144	95	121	111	82	78	48	62	97	39	—	18	53	89	79	437
1757	172	133	97	129	121	83	91	66	75	—	51	25	19	55	90	—	434
1505	170	132	97	122	111	89	89	64	73	—	47	20	20	56	92	85	424
353A	170	139	82	121	—	85	84	61	—	—	43	—	—	—	—	—	430
345	168	128	—	116	100	74	84	52	63	100	41	—	23	56	90	99	412
1721	163	134	89	119	—	—	78	—	—	—	—	22	18	52	87	—	416
KL	162	124	—	116	100	74	84	52	63	100	41	—	23	56	90	99	402
475	160	139	79	—	—	74	85	46	53	85	31	20	16	44	72	—	—
PN	160	130	85	112	96	65	74	44	58	86	33	25	18	48	78	72	402
	176	132	94	123	115	85.5	88	65.5	76	100	47.5	24	19.5	55.5	90.5	87.5	434

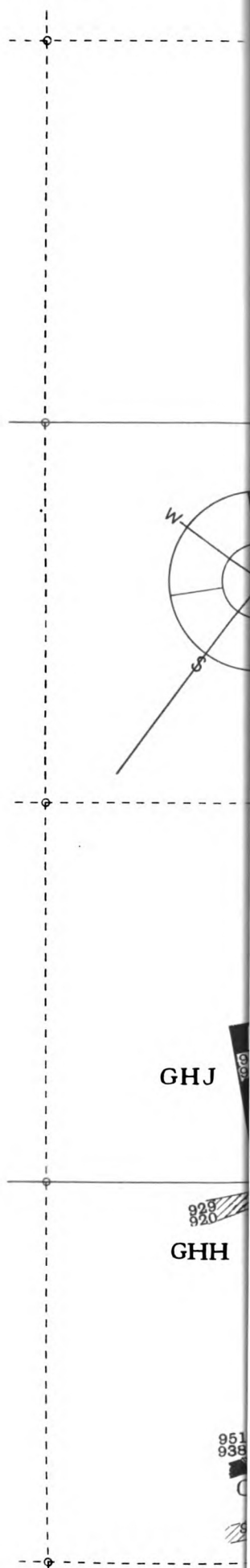
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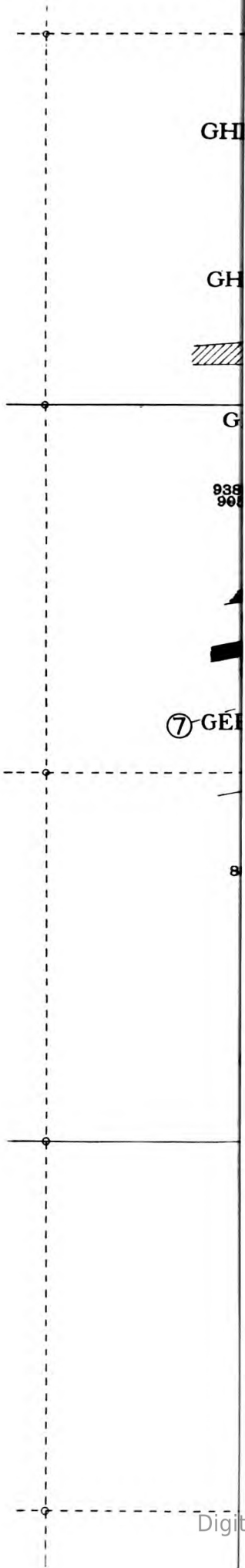
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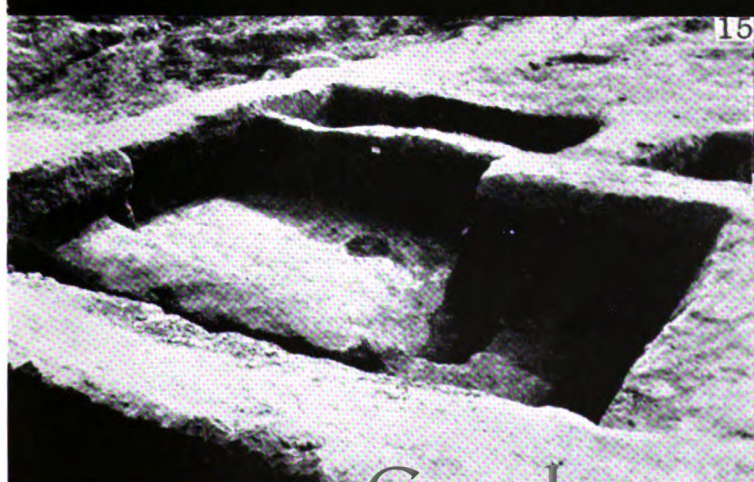
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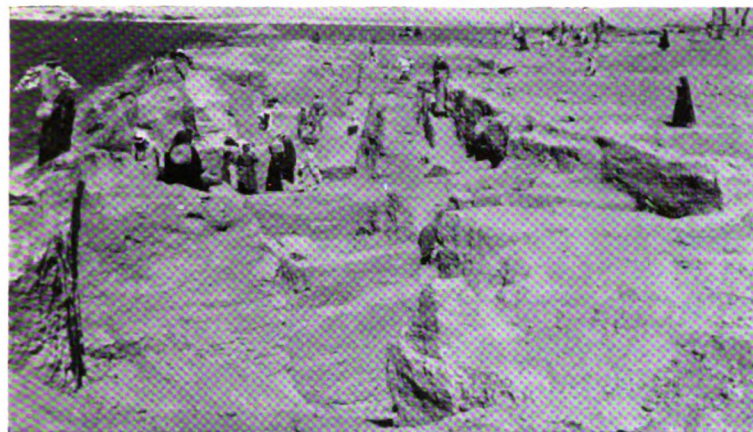
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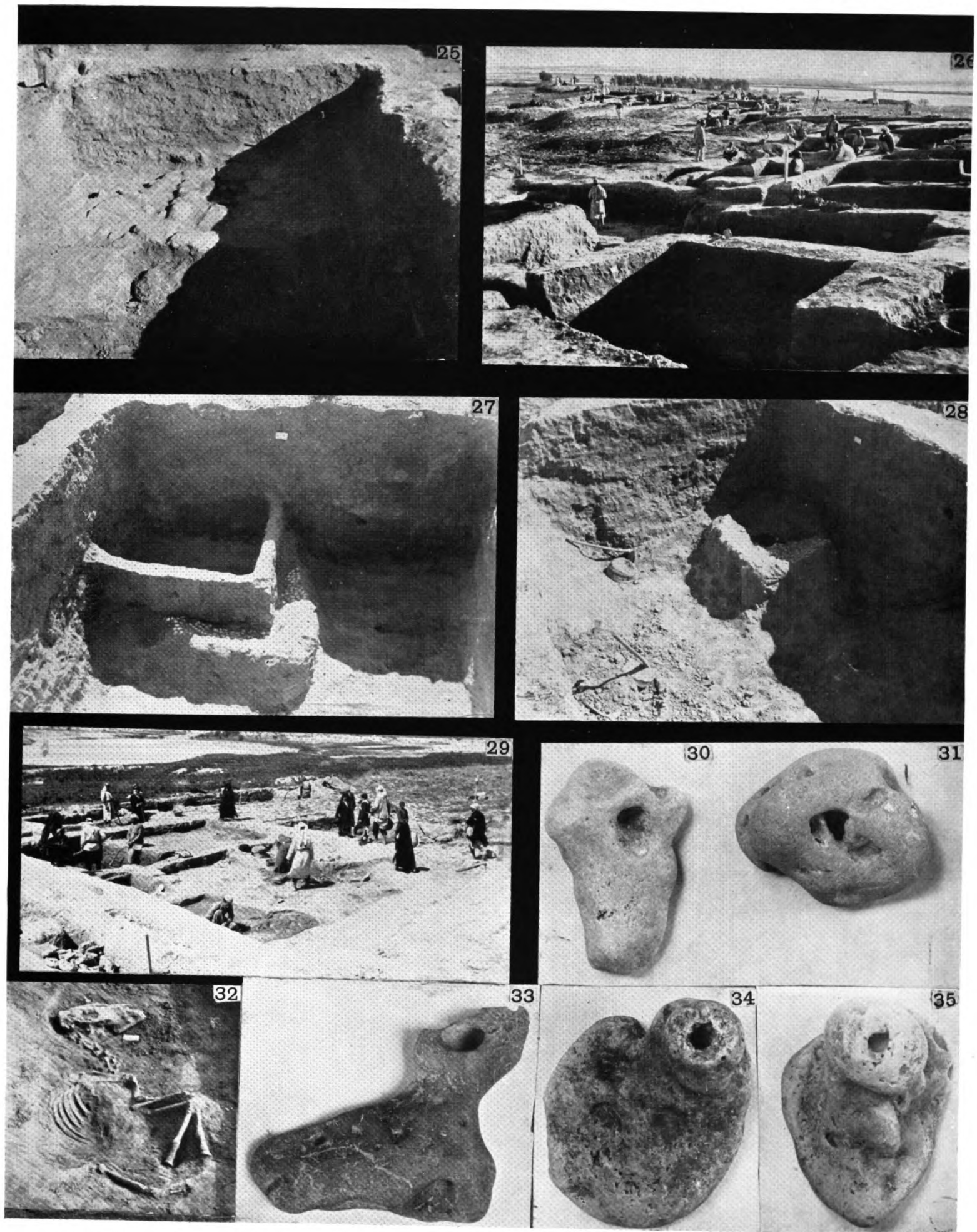
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REGISTER OF GROUPS

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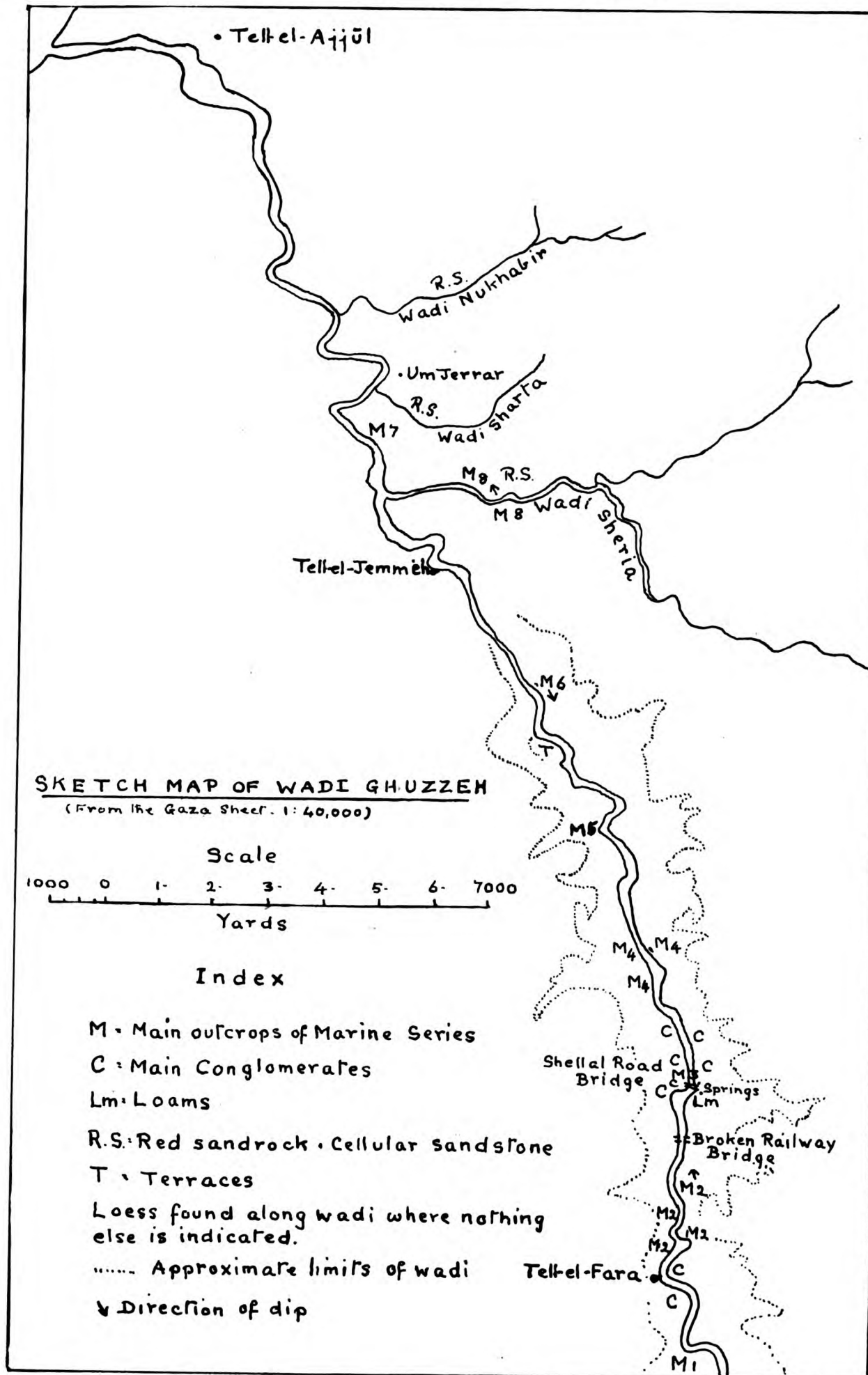
LEVEL	PLAN	POTTERY	SCARABS	WTS	METAL	STONE	BONE	GROUP
698	2\2				58 186			
722	2\1					69 115		
761	AJ	23G ⁴ 38B ³ 51B ⁵ "			86			2050
767	CL	10K ² 19S ³ 43D ⁵ 51G ¹⁰ '					1	2120
771	2\2	43 51				28		1987
771	BP	23D 43F ³ 51B ⁶	plain amethyst					2046
776	2\1	51G ^{II}			3			
781	1\2	43E ⁴ 51G ¹⁰ ' 91A'	mounted					1973
782	BE	37V ⁹ 38P ⁷ 39M ⁷	0+8		77 ball toggle			2032
786		23D ³ F 51G						1972
	2\3	51G ^{II} 55W ⁸ 740 ¹³ " 91C'						1996
	DP	10K ² 14Z ² 23C ⁵ 51B ⁵ 740 ¹³ "						2014
787	1\2	23F ² 38C ² 51G ³			15	70		1994
	2\2				78	14		1977
789	2\3	10N ² s 43E ⁴ 51G ⁴ "			45		12	1991
	2\3	23G ⁵ 51B ⁵ '				26		1997
790	1\1							1994
793	2\3	60Q ³			toggle + A earrings R pin			1998
	AK	740			80 157 171			2066
805	AJ	37V ⁹ 740 ² "						2053
807	BA	740 ¹³ " 89A'						2015
	AL	43F ⁴ 51G ^{II} 740 ² "			112			2039
809	BE	51G ^{II} 55W ^{II}				34		1986
813	BA	23F ³ G ³ 43D ⁶ 51B ⁵ G ³				21		2007
815	1\3	26B ³ 60Q ³ "						1995
816	AQ	31D ³ 43F ⁴ 51G ^{II} 91A ²						2104
	DE	43D ² F ⁴ 51G ^{II}						2055
817	HJ	23G ⁴ 43C ⁷ F ⁴ 51D ⁵ 52D			113 114	6 32		2139
818	GA	51Q ⁶ 740 ¹⁵						2057
819	AD	42			88 173			2074
821	1\2	43E ⁶ F ⁴ 51B ⁶			frag. toggle			1975
823	AC	23G ⁵ 43D ⁷ 52B ⁵						1985
	DV	38H ² ' 91A ⁴						2030
824	1\2	23F ² 38H ² 43F ³						
825	BX	10E ⁹ ' 23K ¹⁹						2150
826	BR	23J ¹⁴ 37V ¹ 38B ² 740"	plain amethyst		87			2085
	CG	51B ⁶			115			2101
827	BE	31V ⁶ ' 60Q						1982
	AC	160 ⁸ 23C ⁷ K ¹⁹ " 43C ⁶ 740 ¹³ '	011		116	30		2031
829	AH	23C ⁴ 43E ⁵ 51G ¹² 740 ¹⁴ '						2033
	AN	340 ³ 43 740 ²⁶						2070
832	2\3	23K ²⁵ ' 51? 740 ¹⁵						1993
	DU	10H ³ 340 ⁸ 38C ²						2011
835	2\3	43C ³ ' 51G ³			79 ore			1984
837	CE	23E ¹⁰ 38B ² 740 ¹¹ "						2068
839	2\3	23G ⁵ 43F ³ 51B ⁵			21			1988
839	AD	23B ⁴ 35P ⁶ ' 740 ¹⁸						2071

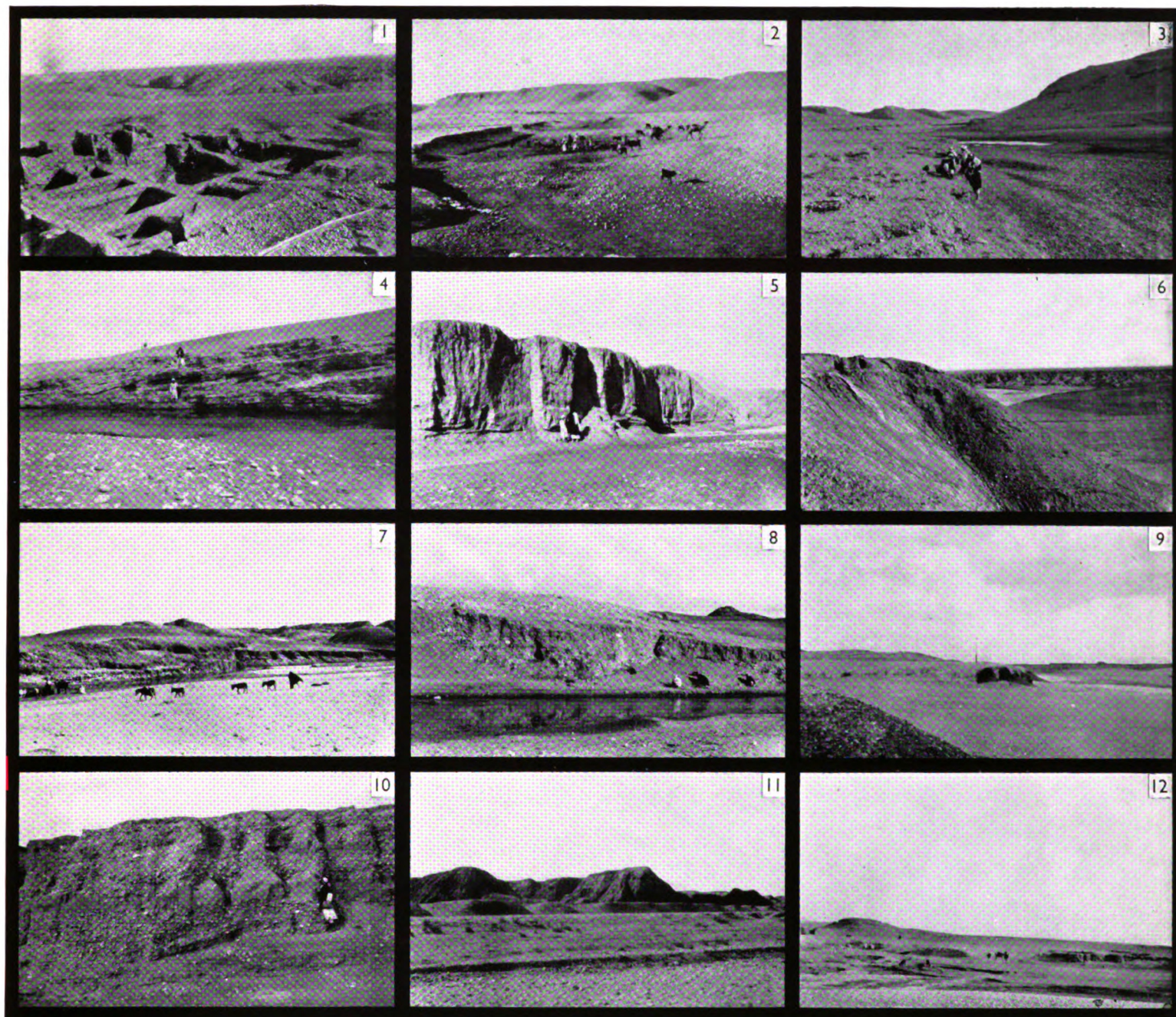
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XLI

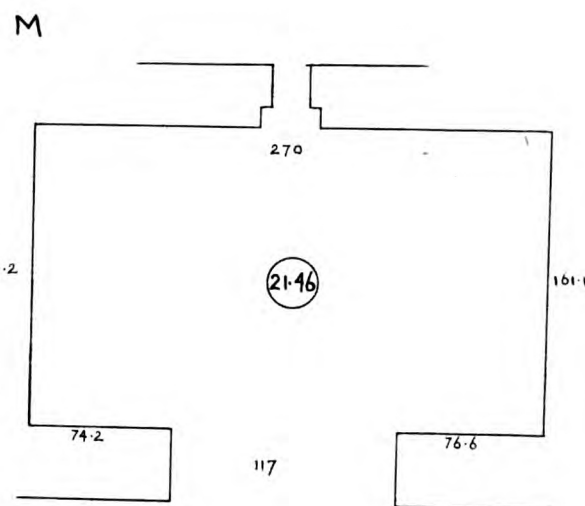
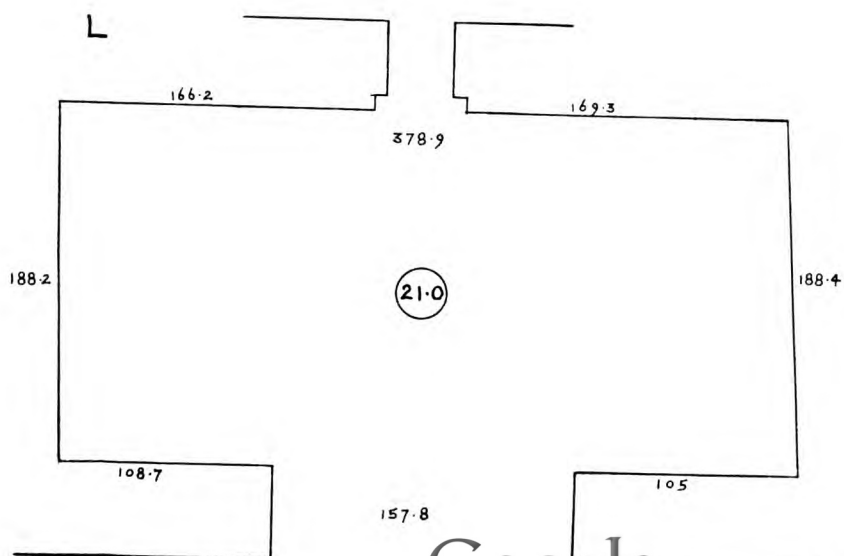
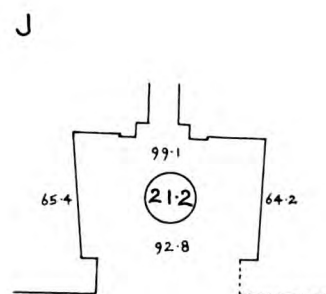
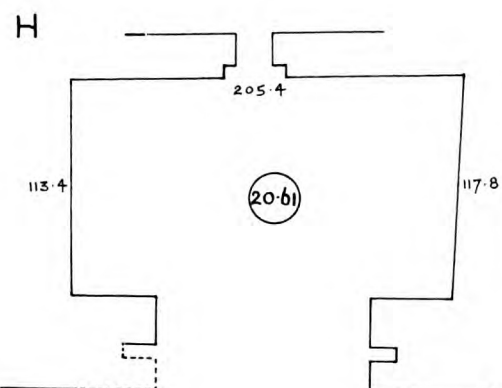
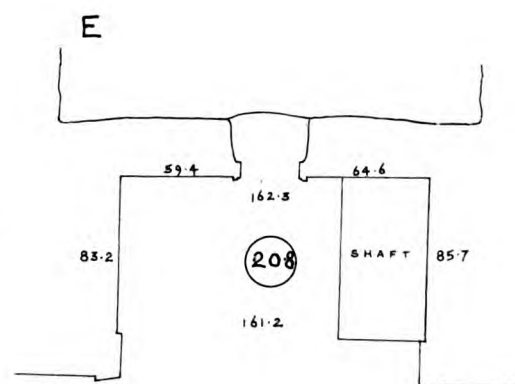
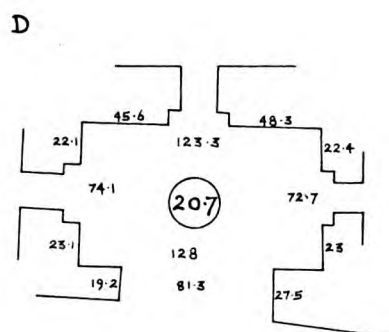
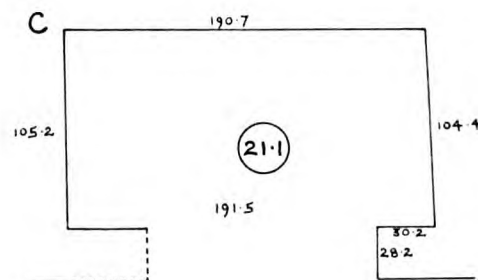
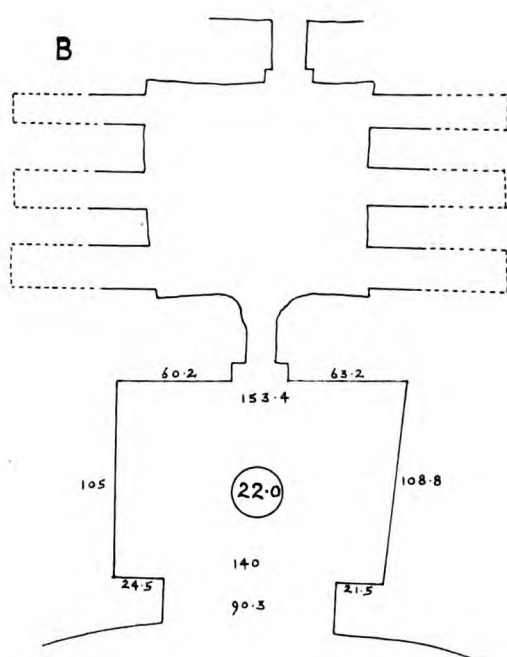
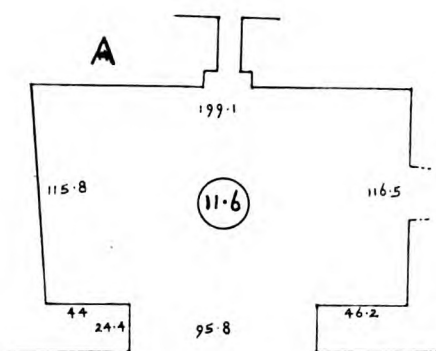
LEVEL	PLAN	POTTERY	SCARABS	WTS	METAL	STONE	BONE	GROUP
840	1\3	10K ² 23E ⁸ 51G ^{II} 740 ³²			97-8			1978
	2\3	60Q ² 740 ¹⁵						1981
842	1\3	10K ⁸			175			1990
	AE	35P ^{XI} 38C ² 740 ³			Al fillet			2080
	CJ	23G ⁵ 43D ³ 51C ³ 740 ¹⁵						2083
843	HC	19S ³ 38O ³ 51G ¹⁰ 740 ¹⁵						2099
846	BA	6N ⁷ 22K ¹⁶ 69C ³			Al fillet, 5 150 176	10		2000
847	CK	23F ³ 43D ³ 51B ⁴				11		2140
850	HB	23E ⁸ 35V ¹ 38J ⁴⁰ 60Q ³ 740 ¹³						2111
852	CD	55W ⁷ 740 ¹⁶					32	2058
	AE	28? 38? 51?			90			2074
853	HB	38G ² 60Q ³						2105
855	HA	10E ⁹ 19F ¹ 51D ³ 740 ³			6			2093
856	BW	34Z ¹⁰ 68H ¹⁰						2040
857	O\1	10P ² 23K ¹⁹						
860	2\4	23K ⁷ 51G ³						2006
862	HF	68A ³			91			2100
	HH	23C ⁴ 35P ⁴ 38B ² 51G ^{II}						2116
864	2\3	43F ³ 60Q ⁴ 740 ¹⁵			177-8			1980
865	BS	21Q ² 52 ^X 55U ⁴						2065
868	AC	10E ⁹ 17Y ⁵ 51P ⁵			48			2008
	JH	3J 23E ⁶ 43F ³ 51G ^{II} 740 ¹⁵			117			2130
871	HF	17V ³ 43D ³ 51B ⁵ 53A ⁶						2098
873	CC	13X ⁴ 14Z ⁴ 68A ¹ glaze						2020
875	BH	16R ⁵ 38G ⁷						2020
877	2\4	16S ⁶ 34A ⁵			74 102			1979
	FV	60Q ¹¹ 19 91A ³			92			2056
879	FX	16K ⁵ 38C ³ 51G ^{II}						2052
	HH	10E ⁹ 17V ¹² 43C ² 52Q						2114
884	JA	34B ² 51G ^{II}			94 120			
885	CC	51P ⁸ 60Q ³						2013
	JA	38C ² 68H ¹⁰			212	3 12		2138
	JJ	23G ⁵ 38H ²						2128
887	JB	6A ⁹ 23C ⁶ DG ⁵ 43C ² 51G ¹⁰			105 121	92A	2	2131
891	FF	43F ³ 740 ¹³						2096
	HE	34B ³ 38N ⁵ 51B ⁵ 740 ¹⁵				1	1	2129
899	BX	51P ⁶ 60Q ¹			95			
905	2\4	6N ¹ 38O ⁶ 89F ²			Al earrings			2025
909	DW	10P ² 34B ³ 539H ⁷			Al dishes 20 ³			2037
912	JM	38B ² 52E 89A ¹			107 145			2133
914	FH	23K ³ 38B ² 43F ³ 53A ¹			9 103			2102
916	EN	64A ² 740 ¹³						2144
	EN	4F 10K ² 23F ² 32E ¹ 51B ⁵ 57F ² 89A ¹						2145
921					hoard			
930	FK	16R ² 19F ³ 35C ² 38N ¹ 68H ¹⁰ 89A ¹						2108
	JJ	17V ⁵ 53C 60Q ¹¹ 68A ²						2119
936	FG	51G ¹ 60Q ³ 64 ^{XI}			Al rings			2086

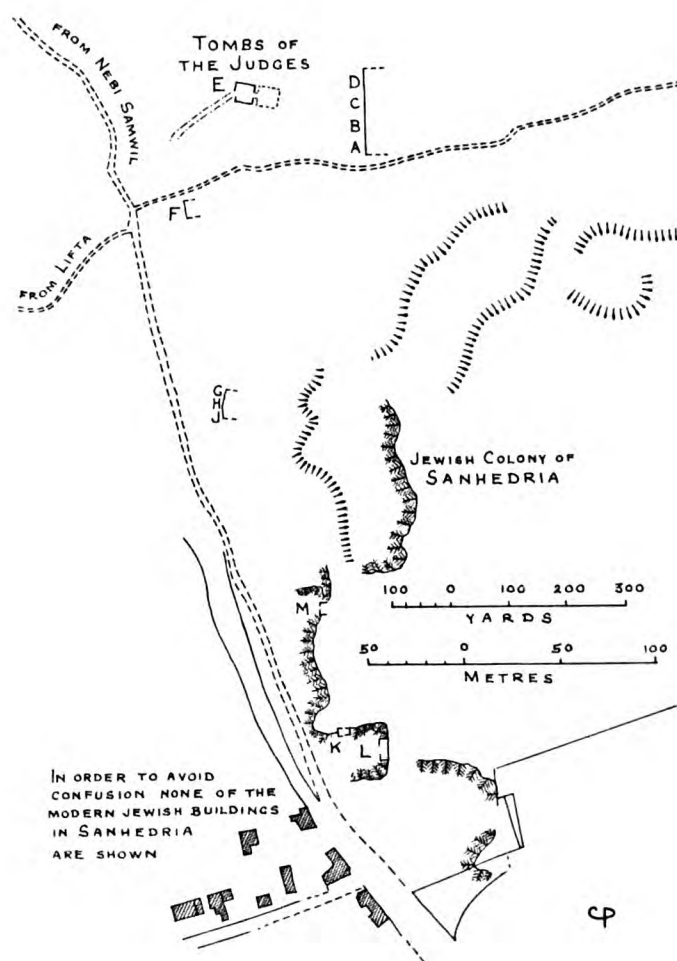
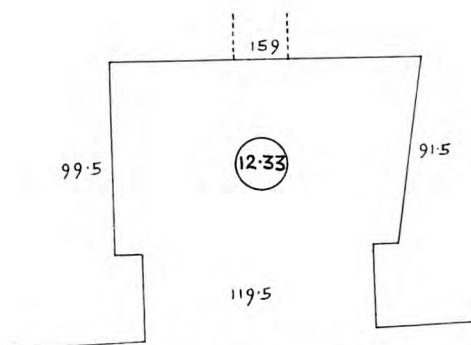
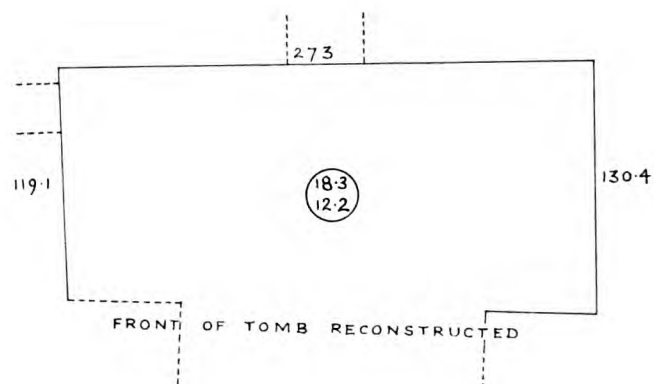
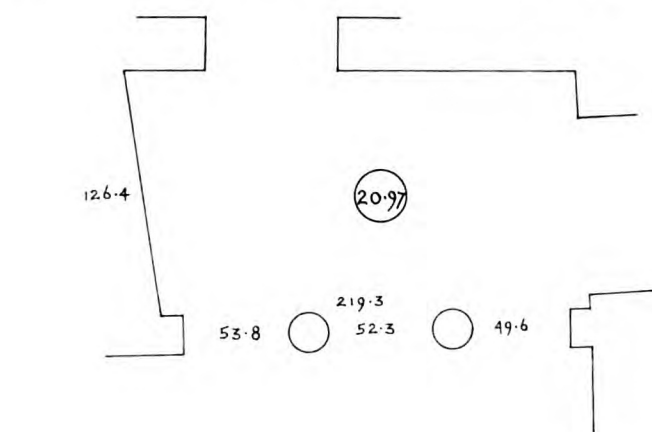




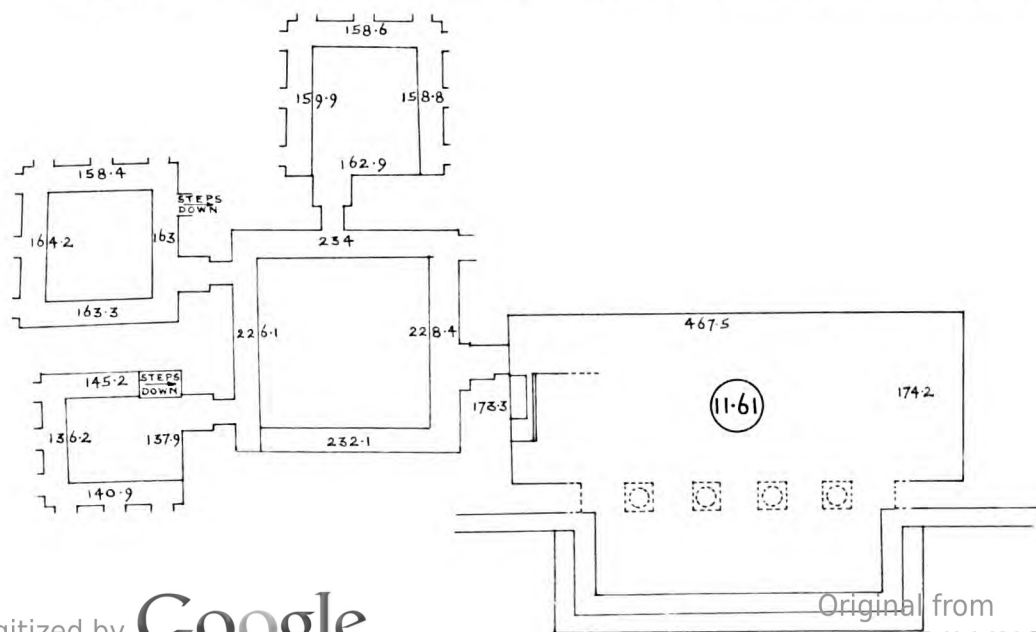


1. Wady, N. from Tell Fara, smooth marine beds near surface
2. Water-hole S. of Tell Fara, loess under sands, W. (see M.1)
3. Platform marine conglomerates E. and sandstone cliff W. (see M.2)
4. Marine sandstones and conglomerates E. (see M.2)
5. Loess cliff between M.4.C on west side of Wady
6. Dissected loess cliffs E. side of Wady, opposite Tell Fara
7. Marine sandstone, and loess banked against edge, E. side (M.4)
8. Conglomerate cutting loess, E. side (northern of 2 Cs N. of Shellāl)
9. Gravel terrace, 16 ft., at Shellāl road bridge W. side of Wady
10. Cliff of 16 ft. gravel terrace, E. of Wady at Shellāl road bridge
11. Loess terraces, backed by loess cliffs, W. side of Wady
12. Loams and sandrock at 'Ain Harara, cliff in foreground (see L.m)





-SCALE 1:200 TOMBS OF THE KINGS, JERUSALEM







1. Hemraniyeh, remains of tower

3. Malfūf, site 3, large round tower

5. Malfūf, site 5, "residence," wall from S.E.

7. Kh. Ronak, site 10, view looking south

2. Hemraniyeh, roof slabs

4. Malfūf, site 3, nearer view of same

6. Malfūf, site 5, "residence," roof slabs

8. Kh. Ronak, site 10, view from inside
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9. El Malfūf, site 6, view to S.W. 10. Site 7, with E. cave 11. Sweifiyeh, site B, shaft to cistern 12. Column base blocking cistern
13. Site 9, looking E., small tower 14. Khirbet es Sar, site 11, view to N. 15. Site 11, square tower, S.E. corner
16. Khirbet es Sar, site 12, church, S. arcade or windows 17. Khirbet es Sar, church, N. arcade or windows





